# ANNUAL REPORT
## 2018-2019


**Central Pollution Control Board**
**Ministry of Environment, Forest & Climate Change**
**Website: www.cpcb.nic.in**

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| **Published by** | : | Member Secretary, Central Pollution Control Board, Delhi-110032 |
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| **Printed at** | : | Rakmo Press Pvt. Ltd., Okhla Phase-1, New Delhi-110020 |

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# CHAPTER - I

# INTRODUCTION

Under the provisions of The Water (Prevention & Control of Pollution) Act, 1974, the Central Government constituted the **'Central Board for the Prevention and Control of Water Pollution'** on September 23, 1974. The name of the Central Board was amended to **Central Pollution Control Board (CPCB)** under the Water (Prevention & Control of Pollution) Amendment Act, 1988 (No. 53 of 1988). The Central Pollution Control Board has been entrusted with the added responsibilities of Air Pollution Control since May, 1981 under the provisions of the Air (Prevention and Control of Pollution) Act, 1981. The enactment of the Environment (Protection) Act, 1986, which is umbrella legislation for enforcement of measures for protection of environment and several notifications of Rules under the Act widened the scope of activities of the Central Board.

The CPCB has been continuously playing a key role in abatement and control of pollution in the country by generating, compiling and collating data, providing scientific information, rendering technical inputs for formation of national policies and programmes, training and development of manpower and through activities for promoting awareness at different levels of the Government and Public at large.

## 1.1 FUNCTIONS OF THE CENTRAL BOARD

The main functions of CPCB, as spelt out in The Water (Prevention and Control of Pollution) Act, 1974, and The Air (Prevention and Control of Pollution) Act, 1981, are:

(i) To promote cleanliness of streams and wells in different areas of the States through prevention, control and abatement of water pollution; and,

(ii) To improve the quality of air and to prevent, control or abate air pollution in the country.

In addition to the main functions of promoting cleanliness of streams and wells, improving the quality of air and to prevent, control or abate air pollution, CPCB has been assigned following National Level functions:

- Advise the Central Government on any matter concerning prevention and control of water and air pollution and improvement of the quality of air;
- Plan and cause to be executed a nation-wide programme for the prevention, control or abatement of water and air pollution;
- Co-ordinate the activities of the State Boards and resolve disputes among them;
- Provide technical assistance and guidance to the State Boards, carry out and sponsor investigations and research relating to problems of water and air pollution, and for their prevention, control or abatement;
- Plan and organise training of persons engaged in programmes for prevention, control or abatement of water and air pollution;
- Organise through mass media, a comprehensive mass awareness programme on prevention, control or abatement of water and air pollution;

- Collect, compile and publish technical and statistical data relating to water and air pollution and the measures devised for their effective prevention, control or abatement;
- Prepare manuals, codes and guidelines relating to treatment and disposal of sewage and trade effluents as well as for stack gas cleaning devices, stacks and ducts;
- Disseminate information in respect of matters relating to water and air pollution and their prevention and control;
- Lay down, modify or annul, in consultation with the State Governments concerned, the standards for stream or well, and lay down standards for the quality of air;
- Establish or recognize laboratories to enable the Board to perform, and;
- Perform such other functions as and when prescribed by the Government of India.

## 1.2 FUNCTIONS OF THE CENTRAL BOARD AS STATE BOARD FOR THE UNION TERRITORIES

- Advise the Governments of Union Territories with respect to the suitability of any premises or location for carrying on any industry which is likely to pollute a stream or well or cause air pollution;
- Lay down standards for treatment of sewage and trade effluents and for emissions from automobiles, industrial plants, and any other polluting source;
- Evolve efficient methods for disposal of sewage and trade effluents on land;
- Develop reliable and economically viable methods for treatment of sewage, trade effluents and air pollution control equipment;
- Identify any area or areas within Union Territories as air pollution control area or areas to be notified under The Air (Prevention and Control of Pollution) Act, 1981; and
- Assess the quality of ambient air and water, and inspect wastewater treatment installations, air pollution control equipment, industrial plants or manufacturing processes to evaluate their performance and to take steps for the prevention, control and abatement of air and water pollution.

## 1.3 DELEGATION OF POWERS BY CENTRAL POLLUTION CONTROL BOARD

As per the policy decision of the Government of India, the Central Pollution Control Board, delegated its powers and functions from time to time under Section 4, Sub Section 4 of The Water (Prevention and Control of Pollution) Act, 1974 and Section 6 of The Air (Prevention and Control of Pollution) Act, 1981 with respect to various Union Territories (Annexure-I) to respective Pollution Control Committees functioning under the local administrative control.

# CHAPTER-II

# CONSTITUTION OF THE CENTRAL BOARD

**2.1** According to the provisions of The Water (Prevention & Control of Pollution) Act, 1974, the Central Board consists of the following members:

- A full-time Chairman, being a person having special knowledge or practical experience in respect of matters relating to environmental protection or a person having knowledge and experience in administering institutions dealing with the matters aforesaid, to be nominated by the Central Government;
- such number of officials, not exceeding five, to be nominated by the Central Government to represent Government;
- such number of persons, not exceeding five, to be nominated by the Central Government, from amongst the members of the State Boards, of whom not exceeding two shall be from amongst the members of the local authorities;
- such number of non-officials, not exceeding three to be nominated by the Central Government, to represent the interest of agriculture, fishery or industry or trade or any other interest which, in the opinion of the Central Government, ought to be represented;
- two persons to represent the companies or corporations owned, controlled or managed by the Central Government, to be nominated by the Government; and
- A full-time Member Secretary, possessing qualifications, knowledge and experience of scientific, engineering or management aspects of pollution control, to be appointed by the Central Government.

**2.2** List of Board Members during the year 2018 - 19 is provided at Annexure-II. The organisation structure of the Central Pollution Control Board is provided at Annexure-III. Staff strength as on March 31, 2019 is furnished in Annexure-IV.

# CHAPTER-III

# MEETINGS OF CENTRAL POLLUTION CONTROL BOARD

## 3.1 MEETINGS OF THE CENTRAL BOARD

During the reporting period i.e. April 01, 2018 to March 31, 2019, five meetings of the Central Board were held as under:

| S.No. | Meeting No. | Date | Place |
|---|---|---|---|
| 1. | 181st | June 19, 2018 | CPCB, Delhi |
| 2. | 182nd | October 23, 2018 | CPCB, Delhi |
| 3. | 183rd | October 31, 2018 | CPCB, Delhi |
| 4. | 184th | December 19, 2018 | CPCB, Delhi |
| 5. | 185th | March 19, 2019 | CPCB, Delhi |

## 3.2 MAJOR DECISIONS TAKEN BY THE BOARD

- Approval of Annual Action Plan for Financial Year 2018-19 for an amount of Rs.100.00 Crores grant in Aid;
- Approval for renewal of recognition for Central Laboratory of Uttar Pradesh Pollution Control Board, Lucknow and recognition of MIT Centre for Analytical Research and Studies, Maharashtra Institute of Technology, Aurangabad, Maharashtra;
- Approval of criteria for non-attainment cities;
- Board accepted the proposal of Procedures followed and delegation of functions for Grant of Permissions (Registrations/Certifications/Authorization etc.) by Central Board;
- Approval of the grant for renewal of recognition to the Regional Directorate laboratory, Central Pollution Control Board, Lucknow and Government Analysts;
- Board accorded its approval for placing Annual Report for the year 2016-17 and 2017-18 in parliament in winter session of 2018;
- Authorizing officers at the level of Scientist 'D' and above to file complaints and prosecute violators of the Environmental regulations before Competent Courts of Law and also to file Appeal, Revision, Writs, and Special Leave Petition.
- Formation of Expert Groups on specific issues on different thematic areas for augmenting technical expertise of CPCB;
- Engagement of Advocate General / Solicitor General and Additional Solicitor General, etc., in cases requiring personal appearance of Chairman and Member Secretary and other sensitive matters;
- Wide circulation to all SPCBs of Guidelines for determining and imposing Environmental Compensation having approved by the Hon'ble NGT.

## 3.3 NATIONAL CONFERENCE

The 63rd Conference of Chairmen & Member Secretaries of Pollution Control Boards/ Committees (SPCBs/PCCs) was organised on March 18, 2019 at New Delhi.

The major issues deliberated during the meeting are as follows:

- Performance Audit of SPCBs/PCCs;
- Environmental compensation and its utilization;
- Utilization of treated wastewater from STP/CETP;
- Extended Producer Responsibility Authorization – Verification;
- National Clean Air Programme (NCAP);
- Water Quality Management during Kumbh;
- Plastic Waste Management in Maharashtra;
- Reducing Automobile Emissions by Commuter Choice Program;
- The agenda items received from State Boards were presented by CPCB such as:
    - Use of pet coke in industries as fuel / feedstock in non-NCR states preamble;
    - Display of data of Online Continuous Effluent/emission Monitoring System (OCEMS) by Central Pollution Control Board on its website;
    - Installation of ETP/STP by Healthcare Facilities for treatment of liquid wastes;
    - Clarification on Requirement of Environmental Clearance under EIA Notification, 2006 by the CBWTF operators for Up-gradation; and
    - Setting up of new CBWTF in the State as per Guidelines issued by CPCB of Common Bio-Medical Waste Treatment Facilities.

# CHAPTER-IV

# COMMITTEES CONSTITUTED BY THE BOARD & THEIR ACTIVITIES

4.1 Environmental degradation is a matter of serious concern. In view of emerging concerns, technical advancements and increased awareness, need was felt time and again for dedicated Expert Groups to advise environmental management efforts and provide technical expertise. As a multidimensional approach and to broaden technical expertise of CPCB, following nine Expert Groups have been constituted comprising eminent experts of different thematic areas.

1. Expert Group on Health Aspects of Air Pollution
2. Expert Group on Vehicular Pollution Control
3. Expert Group on Satellite Based Air Quality Monitoring System
4. Expert Group on Management of Sewage & Sewerage System
5. Expert Group on Water Quality Management
6. Expert Group on Treatment, Storage & Disposal Facilities (TSDFs) – Captive & Common
7. Expert Group on E-Waste Management
8. Expert Group on Implementation of Hazardous and Other Wastes (Management and Tran boundary Movement) Rules, 2016
9. Expert Group on Environmental Damage Assessment

The members of these Expert Groups examine, advise and assist by way of technical inputs to CPCB on issues of concern on their respective fields.

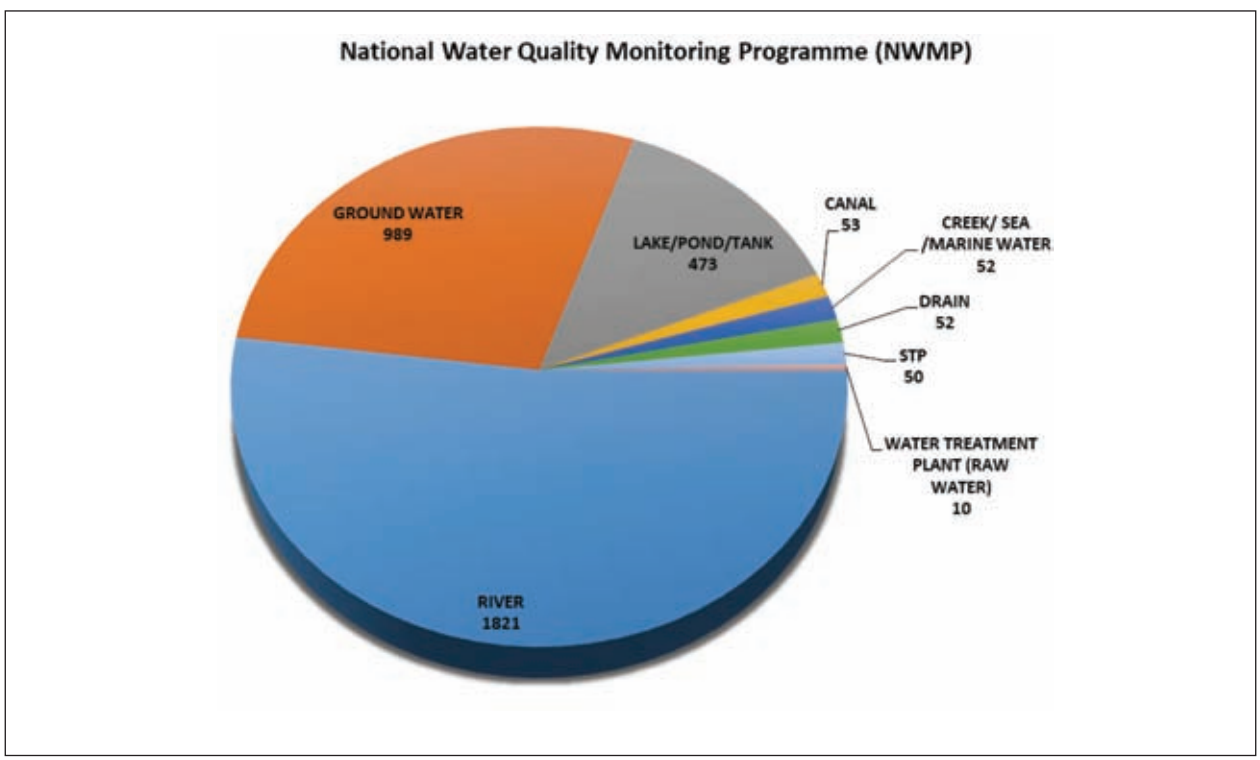
# CHAPTER - V

# WATER, AIR AND NOISE MONITORING NETWORK

## 5.1 WATER QUALITY MONITORING

### 5.1.1 National Water Quality Monitoring Programme (NWMP)

Central Pollution Control Board (CPCB) in association with State Pollution Control Boards and Pollution Control Committees (SPCBs & PCCs) has established a water quality monitoring network. The network presently comprises of 3500 stations in 29 states and 6 union Territories. The monitoring network covers 1821 locations on Rivers, 473 on Lakes/ Ponds/ Tanks, 52 Creeks/Seawater/marine water, 53 on Canals, 52 on Drains, 50 Sewage Treatment Plants, 10 Water Treatment Plants (Raw Water) and 989 Wells. Strengthening of monitoring network has been done by addition of 520 new locations. Monitoring is carried out with a frequency of monthly basis on Surface Water, half yearly basis for Ground Water and yearly basis at few locations.




### 5.1.2 Criteria for Expansion of NWMP network

The monitoring network under National Water Monitoring Programme (NWMP) is augmented by addition of new monitoring locations with surface and ground water locations may be on unrepresented segments of rivers, ponds, lakes and ground water locations SPCBs / PCCs were suggested to do Reconnaissance survey to verify suitability of existing and proposed locations with approachability to collect the samples mainly after mixing zone

in river and in close proximity to industrial areas (in case of ground water).The criteria was proposed for siting of locations and comments were invited for incorporation and in view of non-receipt of comments the criteria was supposed as accepted. The list of criteria specified for Surface Water and Ground Water is given below: -

**(i) Criteria for selection of new locations on surface and ground water:**

- Selection of baseline and impact monitoring stations on rivers considering the total river-line length in the state and habitations along.
- At least 2 ground water locations in each district of the state/UT.
- Locations on sub tributaries of major rivers, other perennial rivers, medium and minor rivers.
- One or two locations on each Lentic water bodies (Lakes, Tanks, Ponds).
- Inland Coastal waters i.e. creeks, estuaries, beaches, sea water, coastal rivers etc.
- River locations downstream of towns and Urban agglomerations (U.A.) having population of 10,000 and more.
- Sampling to be done on either side of banks of river at least at a distance of 250 meters.

**(ii) Criteria for selection of new locations on Rivers**

- Water intake point for community water supply in city/town.
- Presence of large/medium or cluster of small water polluting industries.
- Places of religious bathing (organized).
- Source of river to get indication of its pristine quality.
- Filling up long unrepresented gaps between existing monitoring stations.
- Large section of irrigated area upstream.
- Flow rate / discharge being critical in lean period.
- Upstream and downstream of big cities.
- Confluence of tributaries and Main River (at least 100 m away from D/s of the confluence point).
- At all Inter State boundaries within the respective jurisdiction of the state.
- Wherever river is not having natural flow but flowing only because of sewage, in such a case no sampling of water should be done.
- Downstream of any city, sampling should be done at least at a distance of 1 km down the stream/river.

**(iii) Criteria for selection of new locations on Lakes / Reservoirs / Ponds / Tanks**

- Water abstraction point
- Organized bathing
- In the vicinity of significant out falls.
- Recreational spots

**(iv) Criteria for selection of new locations on Canals**

- Irrigation off-take
- Downstream of pollution outfall
- Drinking water intake point

**(v) Ground Water**

- Drinking water sources located in sanitary conditions and prone to sewage contamination, preferably in shallow aquifer in the vicinity of septic tanks, sewage treatment plant, oxidation pond, cess pools, garbage dump site etc.
- Tube-wells, hand pumps or dug-wells located in industrial areas and prone to contamination and are in use.
- Ground water sources in residential areas.

### 5.1.3 Water Quality Assessment & Identification of Polluted River Stretches

Time series water quality data of 521 rivers for the year 2016 and 2017 was analysed. Based on the assessment of water quality data, 351 polluted river stretches on 323 rivers have been identified in 28 States and 03 UTs. The Water Quality Parameter Biochemical Oxygen Demand (BOD) which is the indicator of organic pollution was considered for identification of Polluted River Stretches. The identified polluted river stretches were prioritised under five classes i.e, Priority- I to V for implementation of pollution control measures and restoration of river water quality fit for bathing in identified polluted stretches. Concerned SPCBs have been requested for taking measures for restoration of water quality through identification of sources of pollution and interventions through treatment of municipal as well as industrial effluents. The State-wise & Priority-wise number of Polluted River Stretches are given in the Table – 5.1

**Table 5.1: State-wise & Priority wise number of Polluted River Stretches**

| S. No. | STATE/ UNION TERRITORY | PRIORITY | | | | | Grand Total |
|---|---|---|---|---|---|---|---|
| | | I | II | III | IV | V | |
| 1 | ANDHRA PRADESH | | | | 2 | 3 | 5 |
| 2 | ASSAM | 3 | 1 | 4 | 3 | 33 | 44 |
| 3 | BIHAR | | | 1 | | 5 | 6 |
| 4 | CHHATTISGARH | | | | 4 | 1 | 5 |
| 5 | DAMAN, DIU AND DADRA NAGAR HAVELI | 1 | | | | | 1 |
| 6 | DELHI | 1 | | | | | 1 |
| 7 | GOA | | | 1 | 2 | 8 | 11 |
| 8 | GUJARAT | 5 | 1 | 2 | 6 | 6 | 20 |
| 9 | HARYANA | 2 | | | | | 2 |
| 10 | HIMACHAL PRADESH | 1 | 1 | 1 | | 4 | 7 |
| 11 | JAMMU & KASHMIR | | 1 | 2 | 2 | 4 | 9 |
| 12 | JHARKHAND | | | | 3 | 4 | 7 |
| 13 | KARNATAKA | | | 4 | 7 | 6 | 17 |
| 14 | KERALA | 1 | | | 5 | 15 | 21 |

| S. No. | STATE/ UNION TERRITORY | PRIORITY | | | | | Grand Total |
|---|---|---|---|---|---|---|---|
| | | I | II | III | IV | V | |
| 15 | MADHYA PRADESH | 3 | 1 | 1 | 3 | 14 | 22 |
| 16 | MAHARASHTRA | 9 | 6 | 14 | 10 | 14 | 53 |
| 17 | MANIPUR | | 1 | | | 8 | 9 |
| 18 | MEGHALAYA | 2 | | | 3 | 2 | 7 |
| 19 | MIZORAM | | | 1 | 3 | 5 | 9 |
| 20 | NAGALAND | 1 | | 1 | 2 | 2 | 6 |
| 21 | ODISHA | 1 | | 3 | 2 | 13 | 19 |
| 22 | PUDUCHERRY | | | | 1 | 1 | 2 |
| 23 | PUNJAB | 2 | | | 1 | 1 | 4 |
| 24 | RAJASTHAN | | | 1 | | 1 | 2 |
| 25 | SIKKIM | | | | | 4 | 4 |
| 26 | TAMIL NADU | 4 | | | 1 | 1 | 6 |
| 27 | TELANGANA | 1 | 2 | 2 | 2 | 1 | 8 |
| 28 | TRIPURA | | | | | 6 | 6 |
| 29 | UTTAR PRADESH | 4 | | 1 | 2 | 5 | 12 |
| 30 | UTTARAKHAND | 3 | 1 | 1 | 4 | | 9 |
| 31 | WEST BENGAL | 1 | 1 | 3 | 4 | 8 | 17 |
| Grand Total | | 45 | 16 | 43 | 72 | 175 | 351 |

Based on the identified polluted river stretches by CPCB during 2018, Hon'ble NGT issued orders vide dated 20.09.2018 and 19.12.2018 in O. A. No 673 of 2018 in the matter of 'News item published in the Hindu authored by Shri Jacob Koshy titled "More river Stretches are now critically polluted: CPCB', with Dr. Tudi Indrasena Reddy & Ors. Versus UOI & Ors, inter-alia directed "All States and Union Territories to prepare action plans within two months for bringing all the polluted river stretches to be fit at least for bathing purposes (i.e BOD - 3 mg/l and FC - 500 MPN/100 ml) within six months from the date of finalisation of the action plans". The action plans may be prepared by four-member Committee comprising, Director, Environment; Director, Urban Development; Director, Industries; Member Secretary, State Pollution Control Board of concerned State. This Committee will also be the Monitoring Committee for execution of the action plan. The Committee may be called 'River Rejuvenation Committee" (RRC). The RRC will function under the overall supervision and coordination of Principal Secretary, Environment of the concerned State/Union Territory.

Out of 351 identified polluted rivers stretches (w.r.t BOD) in 28 States and 3 UTs, 45 fall under P-I category, 16 in P-II category and remaining 290 Polluted river stretches fall under the categories P-III to P-V. During the year 2018-2019, CPCB has received 41 out of 45 action plans w.r.t P-I and 14 out of 16 action plans w.r.t P-II and 182 action plans received w.r.t P-III to P-V polluted river stretches. CPCB has approved 40 action plans out of 55 received by the Task Team. The action plans were prepared and endorsed by the RRCs at States for implementation.

### 5.1.4 Guidelines on Water Quality Monitoring, 2017

Uniform Protocol for Water Quality Monitoring, 2005, (UPWQM,2005) notified under Environment (Protection) Rules, 1986 vide Gazette Notification S.O No 2151 dated 17th

June 2005 used to be followed by all the agencies involved in water quality Monitoring. In the year 2017, MoEF & CC has withdrawn the UPWQM, 2005 and issued 'Guidelines on Water Quality Monitoring, 2017 (GWQM, 2017)'. These guidelines are also available on CPCB website at 'http://cpcb.nic.in/wqm/Guidelines_Water_Quality_Monitoring_2017.pdf.' Details of monitoring location, frequency and the parameters proposed for monitoring are detailed in Table 5.2 and Table 5.3.

**Table 5.2 : Parameters and frequency of monitoring in surface water**

| Type of Station (1) | Frequency (2) | Parameter (3) |
|---|---|---|
| **Baseline:** | **Perennial rivers and Lakes/ Reservoirs:**<br>Six times a year<br>Seasonal rivers:<br>6 times (at equal spacing) during flow period. | **A. Pre-monsoon: Once a year. Analyse 25 parameters as listed below:-**<br>**a. General:** Colour, Odour, Temperature, pH, EC, DO, turbidity, TDS<br>**b. Nutrients:** $NH_3$-N, $NO_2$ + $NO_3$, Total P<br>**c. Organic Matter:** BOD, COD<br>**d. Major Ions:** $K^+$, $Na^+$, $Ca^{++}$, $Mg^{++}$, $CO_3^{--}$, $HCO_3^-$, $Cl^-$, $SO_4^{--}$, |
| | | **e. Other Inorganics:** F, B and other location-specific parameter, if any<br>**f. Microbiological:** Total and Faecal Coliforms<br>**B. Rest of the year (after the pre-monsoon sampling) at every three months' interval:**<br>**Analyse 11 parameters:** Colour, Odour, Temperature, pH, EC, DO, $NO_2$, $NO_3$, BOD, Total and Faecal Coliforms |
| **Trend, Flux/ Impact and Hotspots:** | As indicted in Column 3 | **A.**<br>**(i) For Trend Stations:** Analyse 25 parameters as in Baseline Stations once every month i.e. 12 times a year<br>**(ii) For Flux/Impact Stations:** Analyse 25 parameters as in Baseline Stations twice every month i.e. 24 times a year<br>**(iii) For Hotspot Stations:** Analyse 25 parameters as in Baseline Stations twice every month i.e. 24 times a year<br>**A. Micropollutants: For Trend, Flux/ Impact and Hotspot Stations**<br>**(i) Pesticides-Analyse once a year during Pre-monsoon period**<br>Alachlor, Atrazine, Aldrin/ Dialdrin, Alpha HCH, Beta HCH, Gama HCH (Lindane), Delta HCH, Butachlor, Chloropyriphos, 2,4-Diphenoxyacetic acid, OP-DDT, PP-DDT, DDE, DDD, Alpha Endosulphan, Beta Endosulphan, Sulphate Endosulphan, Ethion, Isoproturon, Malathian, Methyl Parathian, Monocrotophos, Phorate |

| Type of Station (1) | Frequency (2) | Parameter (3) |
|---|---|---|
| | | **(ii) Toxic Metals- Analyse twice a year during Pre-monsoon and Post-monsoon periods**<br>As (III & V), Al, Ag, Cd, Co, Cu, Cr (III & VI), Fe, Pb, Mn, Hg, Mo, Ni, Se, Zn<br>(The parameters may be selected based on local need)<br>**(iii)** Poly Aromatic Hydrocarbons (PAH), Polychlorinated Biphenyls (PCB) and Trihalomethanes (THM) – **Analyse as per site requirement.** |

**Table 5.3 : Parameters and frequency for analysis of ground water samples**

| Type of Station | Frequency | Parameter |
|---|---|---|
| **Baseline:** | **Twice a year**<br>(Pre & Post monsoon season) | **A. Pre and Post Monsoon Season:** Analyse 22 parameters as listed below :<br>**a. General :** Colour, Odour, Temperature, pH, EC, TDS<br>**b. Nutrients :** $NO_2$, $NO_3$, Orthophosphate<br>**c. Organic Matter :** COD<br>**d. Major ions :** $K^+$, $Na^+$, $Ca^{++}$, $Mg^{++}$, $CO_3^{--}$, $HCO_3^-$, $Cl^-$, $SO_4^{--}$,<br>**e. Other inorganics :** F, B and other location-specific parameter, if any<br>**f. Microbiological :** Total and Faecal Coliforms<br>**B. Micropollutants:**<br>**(i)** Pesticides-Analyse once a year during Pre-monsoon period<br>Alachlor, Atrazine, Aldrin/ Dialdrin, Alpha HCH, Beta HCH, Gama HCH (Lindane), Delta HCH, Butachlor, Chloropyriphos, 2,4-Diphenoxyacetic acid, OP-DDT, PP-DDT, DDE, DDD, Alpha Endosulphan, Beta Endosulphan, Sulphate Endosulphan, Ethion, Isoproturon, Malathian, Methyl Parathian, Monocrotophos, Phorate<br>**(ii) Toxic Metals- Analyse twice a year during Pre-monsoon and Post-monsoon periods**<br>As (III & V), Al, Ag, Cd, Co, Cu, Cr (III & VI), Fe, Pb, Mn, Hg, Mo, Ni, Se, Zn<br>(The parameters may be selected based on local need)<br>**(iii)** Poly Aromatic Hydrocarbons (PAH), Polychlorinated Biphenyls (PCB) and Trihalomethanes (THM) – **Analyse as per site requirement.** |

| Type of Station | Frequency | Parameter |
|---|---|---|
| **Trend and Hotspots:** | **Twice a year**<br><br>(Pre & Post monsoon season and other times, if required) | **A.** Pre and Post Monsoon Season: Analyse all the parameters including Micropollutants as listed for Baseline stations.<br>**B. Other times (if required): Analyse 15 parameters as listed below:**<br>**a. General :** Colour, Odour, Temperature, pH, EC, TDS<br>**b. Nutrients :** $NO_2$, $NO_3$, Orthophosphate<br>**c. Organic Matter :** COD<br>**d. Major ions :** $Cl^-$,<br>**e. Other inorganics :** F, B and other location-specific parameter, if any<br>**f. Microbiological :** Total and Faecal Coliforms<br>**g. Micropollutants :** As per site specific requirement |

### 5.1.5 Amendment to the Water Quality Standards for Coastal Water Marine Outfalls: Primary Water Quality Criteria for Sea Water Notified under Environment (Protection) Rules, 1986

Amendment to the Primary Water Quality Criteria for Sea Water Notified under Environment (Protection) Rules, 1986 has been prepared by CPCB in association with Integrated Coastal Marine Area Management (ICMAM) presently called National Council for Coastal Research (NCCR), Ministry of Earth Sciences based on eco-toxicological and histopathological studies for amendment to the existing notification under SW-III and SW-V for seven metals and one pesticide. Based on the studies carried out by NCCR, proposed amendments to the Primary Water Quality Criteria for Sea Waters (SW-III and SW-V) finalised and forwarded to MoEF & CC for notification under Environment (Protection) Rules, 1986.

### 5.1.6 Assessment of Impact of Idol immersion:

Assessed the water quality of river Yamuna at 10 Ghats in Delhi during pre and post events of Idol Immersions and reports submitted to monitoring committee. Main findings of the impact of idol immersions were:

- Overall increase in BOD values was observed during post immersion of both puja periods with different magnitudes
- Fecal Coliform was observed increasing continuously during both the puja periods.
- Increase in Heavy metals was found at more locations on ghats during immersion activity of Ganesh Chaturthi. However, Heavy metals were found increased at less number of locations during immersion activity of Durga Puja.
- Impact of idol immersion was evident largely in Ganesh Chaturthi throughout the Delhi Stretch. In Durga Puja impact was variable at different locations.

### 5.1.7 Water Quality Status of Rivers in India

Central Pollution Control Board (CPCB) is implementing a nationwide water quality monitoring under National Water Quality Monitoring Programme (NWMP) including Rivers in association with State Pollution Control Boards & Pollution Control Committees to fulfil the mandate of Water (Prevention & Control of Pollution) Act, 1974. Based on assessment of water quality of rivers with respect to Biochemical Oxygen Demand (BOD), percentage of locations complying with the water quality criteria for bathing (notified under Environment (Protection) Rules, 1986 in year 2000), 3mg/l or less, has increased over the years indicating improvement in water quality as shown in figure 5.1.

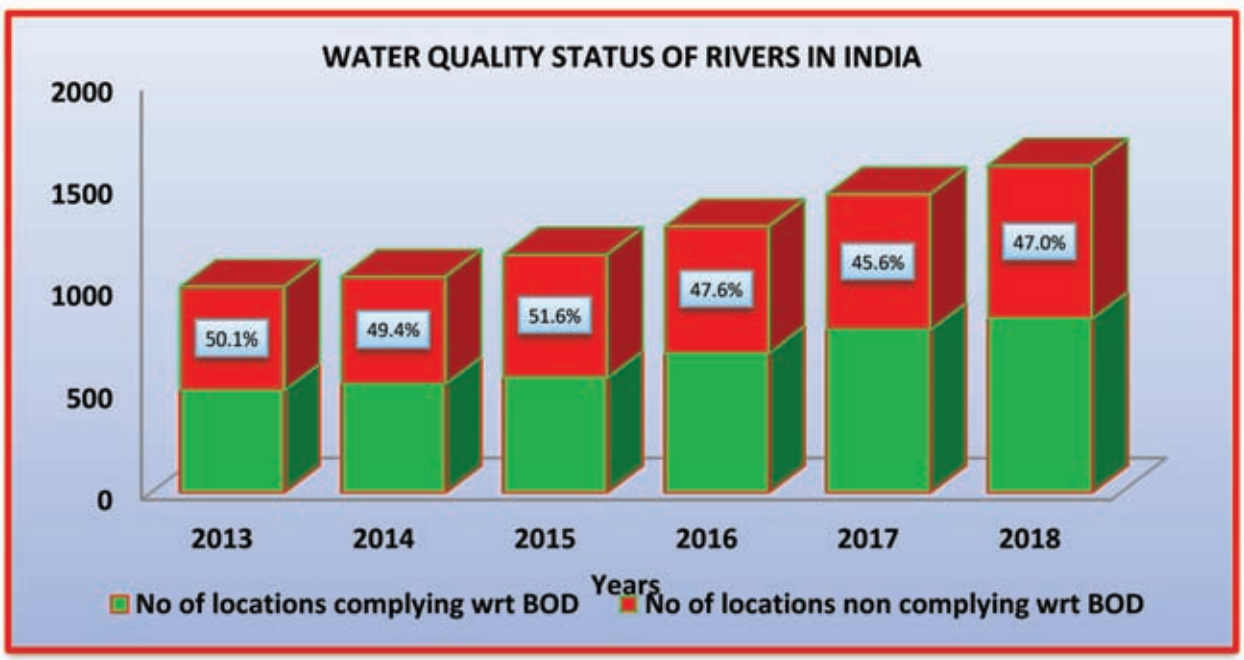



**Figure 5.1 Water Quality Status over last six years (2013 to 2018)**

### 5.1.8 Water Quality Status of Ground Water in India

Based on assessment of ground water quality w.r.t core parameters viz Conductivity (Primary water quality criteria), Nitrate and Fluoride (BIS Drinking water standards, 2012), over the last three years i.e., 2016 to 2018 (Table 5.4), it has been observed that quality of groundwater has improved w.r.t Nitrate, but the trend is fluctuating w.r.t Conductivity and Fluoride concentration.

**Table 5.4 : Ground water quality during 2016 to 2018.**

| Year | No. of Groundwater Locations | Conductivity in µmhos/ cm | % Non-complying stations w.r.t Conductivity | Nitrate (in mg/l) | % Non-complying locations w.r.t Nitrate | Fluoride (in mg/l) | % Non-complying locations w.r.t Fluoride |
|---|---|---|---|---|---|---|---|
| 2016 | 665 | 114 | 17.1 | 3 | 0.004 | 105 | 15.8 |
| 2017 | 765 | 105 | 13.7 | 0 | 0 | 82 | 10.7 |
| 2018 | 864 | 142 | 16.4 | 0 | 0 | 120 | 13.9 |

### 5.1.9 Water Quality Status of Ground Water in Delhi

CPCB carried out ground water monitoring (pre & post-monsoon) at 45 locations in Delhi & NCR. The analysis results of the ground water samples are given in Table 5.5.

**Table 5.5 : Analysis results of ground water monitoring (pre & post-monsoon) in Delhi & NCR**

| S. No | Parameter | Pre-Monsoon | | Post -Monsoon | |
|---|---|---|---|---|---|
| | | Min | Max | Min | Max |
| 1 | *No. of locations from which groundwater samples collected* | 23 | | 18 | |
| 2 | pH | 7.4 | 8 | 6.8 | 7.9 |
| 3 | Nitrate as N (in mg/l) | 2.4 | 92 | 3.3 | 551.3 |
| 4 | TDS ( in mg/l) | 244 | 4130 | 370 | 5800 |
| 5 | Fluoride (in mg/l) | 0.1 | 13.1 | 0.1 | 3.9 |
| 6 | Conductivity **( in µ mhos/cm)** | 415 | 6150 | 86.2 | 6230 |
| 7 | Total Coliform ( in MPN/100 ml) | 2 | 17000 | 2 | 4000 |
| 8 | Total Cr (in mg/l) | BDL | 0.02 | BDL | 0.16 |
| 9 | Mercury ( in mg/l) | BDL | BDL | BDL | BDL |
| 10 | Cadmium (in mg/l) | BDL | BDL | BDL | BDL |
| 11 | Zinc (in mg/l) | BDL | 0.99 | BDL | 1.02 |

The analysis results of the ground water samples revealed that :

**Pre-monsoon assessment at 23 locations**

- pH as well as heavy metals (Total Cr, Hg, Cd and Zn) were within the BIS Drinking Water Norms.
- Nitrate, TDS, Fluoride and Total Coliform were exceeding BIS Drinking Water Norms at 5, 19, 6 and 13 monitored locations respectively.

**Post-monsoon assessment at 18 locations**

- pH as well as heavy metals (Hg, Cd and Zn) were within the BIS Drinking Water Norms and total chromium content is exceeding at 3 locations.
- Nitrate, TDS, Fluoride and Total Coliform were exceeding BIS Drinking Water Norms at 7, 16, 4 and 15 locations respectively.

### 5.1.10 Activities Performed by CPCB under Namami Gange Programme

The following activities are being executed by CPCB under Namami Gange Programme, through Implementation of three projects namely Pollution Inventorization, Assessment and Surveillance (PIAS) on river Ganga, Water Quality Monitoring (WQM) system of river Ganga and Strenghting of Environmental Regulators (SER).

- Waste water disposal from the industries into river Ganga (state wise).
- Waste water disposal from cities into River Ganga (state wise).
- Status of STPs operating on the bank of River Ganga monitored by CPCB.
- Status of industries inspected by CPCB under of 5 Ganga main states.
- Polluted river stretches in India-Status & Criteria.
- Ganga water quality trend.

## 1. Pollution Inventorization, Assessment & Surveillance on River Ganga (PIAS)

Under the project, CPCB has carried out different activities under monitoring, surveillance of Water quality of River Ganga from its origin to confluence to Bay of Bengal such as in-depth monitoring of Grossly Polluting Industries (GPIs), Sewage Treatment Plants (STPs), Common Effluent Treatment Plants (CETPs) and major drains falling into the river of River Ganga and its tributaries, River Ramganga, River Kali East & River Pandu.

The objective of the project is to inventorise the pollution sources (both point and non-point) and to assess the pollution load being discharged into the River Ganga directly or indirectly through tributaries, namely Ramganga and Kali-East. The activities carried out under the project during the year 2018-19 are as follows:

**Table 5.6 : Details of different activities under PIAS (April, 2018-March, 2019)**

| S. N. | Activities | No. of Inspections | Frequency of monitoring |
|---|---|---|---|
| 1. | Compliance verification of Grossly Polluting Industries (GPIs) | 313+ 952 (through third party) | Yearly |
| 2. | Adequacy Assessment of Common Effluent Treatment Plants (CETPs) | 17 | Quarterly |
| 3. | Performance evaluation of Sewage Treatment Plants (STPs) | 200 | Quarterly |
| 4. | Periodic Pollution assessment of major drains falling into the river Ganga | 491 | Half-yearly |

### 1.1 Compliance verification of Grossly Polluting Industries (GPI)

Under PIAS project in 2018, 961 Grossly Polluting Industries (GPIs) has been inventorized operating in the main stem of River Ganga, in four Ganga main stem States namely Uttarakhand, Uttar Pradesh, Bihar and West Bengal. Total number of 1265 GPI inspections are done by CPCB in this year. Among them, 952 GPIs were inspected by Third Party Technical Institutes during 2018. Overall compliance status of GPIs are depicted in Table 5.7 & 5.8 as follows;

**Table 5.7 : Status of direction compliance of GPIs inspected by CPCB**

| Status | April, 2018 to March, 2019 |
|---|---|
| Total No. of GPIs Inspected | 313 |
| Units verified for deletion from GPIs list | 179 |
| Closed | 28 |
| Non-Compliance<br>(A) Closure Direction | 6 |

| Status | April, 2018 to March, 2019 |
|---|---|
| (B) SCN | 1 |
| Complying | 17 |
| Under Process | 70 |
| Under NGT | 12 |
| TOTAL | 313 |

**Table 5.8 : State-wise Compliance Status of GPIs by Technical Institutes during 2018**

| S. No | State | Total | Self-closed | | Complied | Non-complied | | |
|---|---|---|---|---|---|---|---|---|
| | | | Temporary closed | Permanent closed | | Total | SCN/ compliance directions | Closure |
| 1 | Bihar | 48 | 5 | 2 | 41 | 0 | 0 | 0 |
| 2 | Uttar Pradesh | 812 | 172 | 24 | 508 | 108 | 0 | 108 |
| 3 | Uttarakhand | 57 | 4 | 4 | 49 | 0 | 0 | 0 |
| 4 | West Bengal | 44 | 4 | 0 | 38 | 2 | 0 | 2 |
| | Total | 961 | 185 | 30 | 636 | 110 | 0 | 110 |

**Table 5.9 : Status of online monitoring system in Grossly Polluting Industries on River Ganga (as on 31st March, 2019)**

| Total No. of GPI | 961 |
|---|---|
| Self-Closed | 215 |
| OCEMS installed | 800 |
| No. units Connected | 800 |
| No. of units yet to install OCEMS | 161 |

List of Technical Institutions engaged by CPCB for execution of special drive is as follows;

**Table 5.10 : List of Technical Institutions engaged by CPCB**

| S. N. | Name of Institutes | No. of GPIs Allotted | No. of units covered |
|---|---|---|---|
| 1 | IIT Roorkee | 43 | 43 |
| 2 | IIT BHU, Varanasi | 321 | 321 |
| 3 | AMU | 33 | 33 |
| 4 | IIT Kharagpur | 35 | 35 |
| 5 | NIT Patna | 48 | 48 |
| 6 | IIT Delhi | 89 | 89 |
| 7 | CPPRI, Sharanpur | 39 | 39 |
| 8 | PCRI BHEL, Haridwar | 52 | 52 |

| S. N. | Name of Institutes | No. of GPIs Allotted | No. of units covered |
|---|---|---|---|
| 9 | Jadavpur University, Kolkata | 9 | 9 |
| 10 | MNNIT Allahabd | 216 | 216 |
| 11 | HBTU | 43 | 43 |
| 12 | JMI | 24 | 24 |
| 13 | CPCB | 9 | 9 |
| | Total | 961 | 961 |

## 1.2 Status of Adequacy Assessment of Common Effluent Treatment Plants (CETPs):

There are 8 Common Effluent Treatment Plants (CETPs) inventorised by CPCB which are located at the bank of river Ganga or its tributaries affecting the water quality of river Ganga directly or indirectly. List of 8 CETPs are as follows:

1. CETP at UEM-SIDCUL, Haridwar, Uttarakhand.
2. CETP Leather Technology Park, Banthar, Unnao
3. CETP at UPSIDC Industrial Area, Site – II, Unnao, Uttar Pradesh.
4. CETP at Jajmau, Kanpur, Uttar Pradesh.
5. CETP Sitarganj, Uttarakhand
6. IIE SIDCUL CETP, Pant Nagar, Uttarakhand
7. Rooma Industrial Area, Kanpur
8. Textile Center, Pilkhuwa, Uttar Pradesh

During the year, total 17 monitoring of CETPs have been done covering 07 CETPs. Out of 07 CETPs, 02 were found complying and 05 were non-complying. Overall status of inspection of CETPs is as follows;

**Table 5.11 : Status of CETPs in Ganga Main stem as on February, 2019**

| S. N. | Name of CETP | Member unit connected * | Type of Industries | Designed capacity /day in MLD | Operational Status | Compliance status |
|---|---|---|---|---|---|---|
| 1 | CETP Jajmau, Kanpur. | 357 | Tanneries effluent combined with sewage | 36.0 | Operational | Non complying |
| 2 | Leather Technology Park, Banthar, Unnao | 42 | Tanneries | 4.15 | Operational | Non complying |
| 3 | UPSIDC, Site-II, Unnao | 21 | Tanneries | 2.15 | Operational | Non complying |
| 4 | CETP Sitarganj, Uttarakhand | 97 | Mixed | 4.0 | Operational | Non complying |

| S. N. | Name of CETP | Member unit connected * | Type of Industries | Designed capacity /day in MLD | Operational Status | Compliance status |
|---|---|---|---|---|---|---|
| 5 | IIE SIDCUL CETP, Pant Nagar, Uttarakhand | 310 | Mixed | 4.0 | Operational | Complying |
| 6 | Rooma Industrial Area, Kanpur | 12 | Textile | 1.55 | Operational | Non complying |
| 7 | Textile Center, Pilkhuwa (UP) | 11 | Textile | 2.10 | Operational | Complying |

*Operational numbers may vary.

**Action Taken by CPCB for CETP**

a. CETPs at Banthar and Site –II, Unnao

- CPCB issued Show Cause notices to operational member units of CETP Banthar and Site-II, Unnao.
- A meeting with UPPCB officials, representatives of member units of both CETPs and CETP operators was organized at CPCB on 25/09/2018 and an Action Plan has been finalized for improvement in PETPs functioning, adoption of cleaner technology such as mechanical desalting of hides, installation of mechanical sludge dewatering such as filter press, adequacy assessment of PETPs and Chrome Recovery Plants (CRPs), installation of flow meters and capacity assessment of drums installed at individual tannery.

b. CETP at Rooma, Kanpur

- CPCB issued closure notices to member units of CETP Rooma.
- After submission of CETP adequacy report units were allowed to operate at 50% of consented capacity.

## 1.3 Status of Performance evaluation of Sewage Treatment Plants (STPs):

There are 82 Sewage Treatment Plants (STPs) inventorised by CPCB which are located at the bank of river Ganga or its tributaries affecting the water quality of river Ganga directly or indirectly. The latest status of (STPs) monitored are given as follows;

**Table 5.12 : Sewage Treatment Facility in Ganga Front Towns Inventoried under PIAS**

| S. N. | State | No. of STP | Installed Capacity of STPs (MLD) | Towns covered by 82 STPs |
|---|---|---|---|---|
| 1. | Uttarakhand | 22 | 213.065 | 10 |
| 2. | Uttar Pradesh | 25 | 969.26 | 9 |
| 3. | Bihar | 2 | 80 | 1 |
| 4. | Jharkhand | 0 | 0 | 0 |
| 5. | West Bengal | 33 | 512.15 | 26 |
| | Total | 82 | 1774.475 | 46 |

**Table 5.13 : Monitoring Status of STPs carried out under PIAS**

| Year | No. of inspection | No. of STPs Visited | Operational | Complying | Non-complying | Non-operational |
|---|---|---|---|---|---|---|
| | | A=(B+E) | B = (C+D) | C | D | E |
| 2018-19 | 194 | 74 | 52 | 44 | 8 | 22 |

**Major observations**

- During the year CPCB, has carried out 194 inspections covering 74 STPs of main stem river Ganga and 14 STPs of river Hindon catchment located at Ghaziabad. Based on latest inspection out of 74 STPs, 52 STPs were found operational, while 22 were non-operational. Out of 22 non-operational 18 STPs are located at West Bengal. Out of the 52 operational STPs, 44 were complying and 8 were found non-complying (Uttarakhand-03 & Uttar Pradesh-05) with respect to general discharge standards.
- Apart from 194 regular inspections of STPs, 36 under construction/ under trial / under rehabilitations STPs were visited.
- STPs at Gangotri, Srinagar, Rishikesh (Swarg Ashram & Tapovan), Tehri, Dehradun (Kargi, Mothrowala old & Mothrowala New) located at Uttarakhand, Garh, Kannauj, Allahabad (Naini), Bingawa (Kanpur), Varanasi (Dinapur-140 MLD) of Uttar Pradesh are operating under capacity. The major reason is non-availability of sewerage system.

**Action Taken by CPCB for Sewage Management**

- Directions issued during April, 2018 under Section 5 of Environment (Protection) Act, 1986 to Uttar Pradesh Jal Nigam for no-compliance of STPs located in Uttar Pradesh.

## 1.4 Status of Pollution Assessment of major drains falling into the river Ganga

There are 257 Drains inventorised by CPCB, out of which 194 drains are discharging into river Ganga directly and 63 drains through tributaries rivers Ramganga (31), Kali-east (27) and Pandu (5). Latest status of assessment of drains are given as follows;

**Table 5.14 : Observed Variation in Flow and Organic Load of Priority Drains monitored during Pre- and Post- Monsoon, 2018 (Discharged into Ganga)**

| State/ Phase/ Segment | Priority Towns | Mixed Priority Drains | Domestic Priority Drains | Total Priority Drains | Pre-Monsoon, 2018 | | Post-Monsoon, 2018 | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Flow (MLD) | BOD Load (TPD) | Flow (MLD) | BOD Load (TPD) |
| Uttarakhand Phase-I Segment-A (Gangotri to Haridwar D/S) | 05 | NIL | 14 | 14 | 403.21 | 23.19 | 435.86 | 8.32 |
| Uttar Pradesh Phase-I Segment-B (Haridwar D/S to Kanpur D/S to Unnao) | 07 | 11 | 19 | 30 | 578.81 | 55.08 | 859.21 | 42.73 |

| State/ Phase/ Segment | Priority Towns | Mixed Priority Drains | Domestic Priority Drains | Total Priority Drains | Pre-Monsoon, 2018 | | Post-Monsoon, 2018 | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Flow (MLD) | BOD Load (TPD) | Flow (MLD) | BOD Load (TPD) |
| Uttar Pradesh Phase-II (Unnao D/S to UP Border) | 06 | 05 | 21 | 26 | 1125.73 | 66.44 | 782.88 | 42.21 |
| Bihar Phase-III (UP Border to Jharkhand) | 05 | 02 | 19 | 21 | 1087.18 | 39.47 | 984.99 | 40.55 |
| Jharkhand Phase-III (UP Border to Jharkhand) | 01 | NIL | 02 | 02 | 42.56 | 2.48 | 41.35 | 2.45 |
| West Bengal Phase-IV (Jharkhand Border to Bay of Bengal) | 34 | 16 | 42 | 58 | 7375.02 | 241.17 | 7615.85 | 212.45 |
| Total | 58 | 34 | 117 | 151 | 10,612.51 | 427.83 | 10,720.14 | 348.71 |

**Note:**

i. *Drains which having flow equal to or more than 1MLD and some exceptional drains (< 1MLD) which discharges directly into main stem of River Ganga were considered as priority drains in pre and post-monsoon, 2018. Therefore, total no. of priority drains discharged into River Ganga is 151.*

ii. *As per joint monitoring teams of post-monsoon, 2018, recommended to remove 3 priority drains (i. e Sasanghat Drain, Kashipur Khal & Baranagar Khal) from West Bengal and to add drains i.e. Collectorate drain (Uttarkashi, UK), IDPL drains (Rishikesh, UK), Visundarpur drain (Visundarpur, UP), Jagaddal drain (Jagaddal, WB) and Rosbara khal (Bandel, WB).*

**Table 5.15 : Observed Variation in Flow and Organic Load of Priority Drains monitored during Pre- and Post- Monsoon, (Discharged tributaries of river Ganga)**

| State/ Phase/ Segment | Priority Towns | Mixed Priority Drains | Domestic Priority Drains | Total Priority Drains | Pre-Monsoon, 2018 | | Post-Monsoon, 2018 | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Flow (MLD) | BOD Load (TPD) | Flow (MLD) | BOD Load (TPD) |
| Uttar Pradesh Phase-I Segment-B (Ramganga) | 04 | 08 | 16 | 24 | 525.48 | 98.09 | 932.73 | 50.46 |

| State/ Phase/ Segment | Priority Towns | Mixed Priority Drains | Domestic Priority Drains | Total Priority Drains | Pre-Monsoon, 2018 | | Post-Monsoon, 2018 | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Flow (MLD) | BOD Load (TPD) | Flow (MLD) | BOD Load (TPD) |
| Uttar Pradesh Phase-I Segment-B (Kali East) | 10 | 11 | 14 | 25 | 645.01 | 72.44 | 953.29 | 229.58 |
| Uttar Pradesh Phase-I Segment-B (Pandu) | 01 | 03 | 05 | 05 | 353.51 | 30.36 | 261.58 | 22.61 |
| Total | 15 | 22 | 32 | 54 | 1524.00 | 200.89 | 2147.60 | 302.65 |

**Note:**

i. *Drains which having flow equal to or more than 1MLD and some exceptional drains (< 1MLD) which discharges directly into tributaries were considered as priority drains in pre and post-monsoon, 2018. Therefore, total no. of priority drains discharged into tributaries (Ramganga, Kali East & Pandu) is 54.*

ii. *As per joint monitoring teams of post-monsoon, 2018, recommended to remove 2 priority drains (i.e. Adil Nagar & Bridge Dhameda) from Uttar Pradesh.*

## 2. Water Quality Monitoring on River Ganga

The Ganges, is the biggest river in the Indian subcontinent in terms of water flow. The total length of the Ganga River is 2525 km. The Ganges originates near Gangotri and travels approx. 350 km in Uttarakhand before entering in Uttar Pradesh at village Balawali in Bijnor District. From Balawali it flows 1,150 km in Uttar Pradesh and enters in Bihar at village Sitab Diara. From Sitab Diara it flows 450 km. in Bihar and enters in to West Bengal at village Manikchak near Farakka in Malda. From Manikchak to the port town of Haldia (near Kolkata) it flows 550 km. in West Bengal before draining all the water in Bay of Bengal.

The Ganga Basin has an area of approx. 8,61,404 $km^2$. Ganga has a large number of tributaries. Some of these are of Himalayan origin having considerably large water wealth. The major tributaries of the Ganga within India are as follows:

Left tributaries - Karnali, Mahakhali, Gandak, Koshi (Kosi), Ghaghra, and Damodar

Right tributaries - Yamuna, Son, Mahananda, Chambal

Water quality monitoring of River Ganga is being carried out by Manual Water Quality Monitoring system at specific locations and through Real Time Water Quality Monitoring Stations (RTWQMS) at 36 locations.


## 2.1 Real Time Water Quality Monitoring Stations

CPCB has been mandated with the responsibility of undertaking continuous Real Time Water Quality Monitoring (RTWQM) of River Ganga. During first phase, 36 RTWQM stations have been commissioned w.e.f. 11.03.2017 under World Bank supported National Ganga River Basin (NGRB) Project. State-wise details of RTWQM stations is provided in Table 5.16.

20 Real Time stations were installed on main stem of river Ganga; 7 on the tributaries; Ramganga (2), Banganga (1), Kali (1), Pandu (1), Varuna (1) & Gomti (1); and 9 on the drains viz. Jagjeetpur at Haridwar (U.K.), Mawaiyanala at Allahabad (U.P.), Kurzi Nala, Mandiri nala, Anta Nala & Rajapul nala at Patna (Bihar), Srirampore nala, Ballykhal nala & Chitpur (W.B.).

These real time stations measure water quality of river Ganga 24X7 for 17 identified parameters through sensors.

**Table 5.16 : State-wise RTWQM Stations**

| S. No. | State | Total no. of RTWQM stations |
|---|---|---|
| 1 | Uttarakhand | 01 |
| 2 | Uttar Pradesh | 21 |
| 3 | Bihar | 4 |
| 4 | West Bengal | 10 |
| | Grand Total | 36 |

Each Stations has been specified a certain number of water quality parameters which is based on water quality trend of River Ganga at different locations. Upto 17 parameters are being displayed i.e. BOD, DO, EC, pH, Temperature, Ammonia, Chloride, COD, TSS, Turbidity, Color, Fluoride, Nitrate, Potassium, BTX, TOC and Water level.

In addition to 36 Real Time Water Quality Monitoring Stations, 40 new RTWQM Stations have been proposed for installation. Based on learning of presently operating 36 RTWQM stations, 12 parameters have been proposed for monitoring: Bio-chemical Oxygen Demand, Dissolved Oxygen, Conductivity, pH, Temperature, Ammonia, Chloride, Chemical Oxygen Demand, Turbidity, Nitrate, TOC and Water level.

## 3. Strengthening of Environmental Regulators-CPCB

### 3.1 Manual Water Quality Monitoring

Central Pollution Control Board (CPCB) is implementing a manual water quality monitoring of River Ganga at 95 locations in five States viz. Uttrakhand, Uttar Pradesh, Bihar, Jharkhand and West Bengal under National Water Quality Monitoring Programme (NWMP) in association with State Pollution Control Boards to fulfil the mandate of Water (Prevention & Control of Pollution) Act, 1974 for water quality criteria parameters as per the Standard Operating Procedure (SoP) of CPCB, which stipulates only the parameters to be monitored. State-wise number of manual water quality monitoring stations is given below:

**Table 5.17 : State-wise number of manual water quality monitoring stations**

| Sl. No. | State Name | Total No. of Stations |
|---|---|---|
| 1 | Uttrakhand | 16 |
| 2 | Uttar Pradesh | 30 |
| 3 | Bihar | 32 |
| 4 | Jharkhand | 4 |
| 5 | West Bengal | 13 |
| Grand Total | | 95 |

### 5.1.11 Biological Water Quality Evaluation of River Ganga Using Benthic Macro-Invertebrates

Water quality assessment involves the analysis of physico-chemical and biological parameters. The aim of present investigation was to assess biological water quality of River Ganga using benthic macro-invertebrates as indicator organisms. The ubiquitous nature of benthic macro invertebrates covers wide habitat and area, the large number of species covers a wide spectrum of pollution and pollutants, the sedentary lives of macro invertebrates elucidate temporal changes (continuous monitoring). Biological surveillance of benthic macro-invertebrate communities with special emphasis on characterizing taxonomic richness and composition is therefore the most sensitive tool available for detecting alterations in aquatic ecosystems.

In the present investigation, bio-assessment of River Ganga has been carried out from Haridwar (Uttarakhand) to Garden Reach (West Bengal) with the objective to classify the river stretch on the basis on Biological Water Quality Criteria (BWQC), a combination of Diversity Score and Saprobic Score.

Total 156 sampling events were carried out for biological water quality assessment during December, 2017 to March, 2019. State-wise distribution of sampling locations assessed during the above mentioned period is given in Table 5.18. Total 41 locations were explored for biological water quality assessment. Out of 41 locations, 35 were on main stream of

River Ganga and 06 were on tributaries {River Saloni (Muzaffarnagar), RiverRamganga (D/s Moradabad), River Pandu (Kanpur), River Varuna (Varanasi), River Gomti (Varanasi), River Falgu (West Bengal)}. Of the 35 locations, 03 were in Haridwar stretch, 20 in Uttar Pradesh stretch, 04 were in Bihar and 08 were in West Bengal stretch of River Ganga.

**Table 5.18 : Biological Water Quality Evaluation of River Ganga**

| State | 2017-18 | | 2018-19 | |
|---|---|---|---|---|
| | Pre-monsoon (Apr., 2017 to June, 2017) | Post-monsoon Dec., 2017 – Mar., 2018 | Pre-monsoon (Apr., 2018 - Aug, 2018) | Post-monsoon (Dec., 2018 – Mar., 2019) |
| Uttarakhand | 03 | 03 | 03 | 04 |
| Uttar Pradesh | 25 | 25 | 25 | 25 |
| Bihar | 04 | 04 | 04 | 04 |
| West Bengal | 09 | 09 | 09 | -- |
| **Total locations** | **41** | **41** | **41** | **33** |
| | **82** | | 74 | |

**Table 5.19 : Biological water quality of main strem of River Ganga Pre-monsoon (April - June, 2017)**

| State | No. of locations | Diversity Score* | Saprobic Score* | Biological water quality | Biological water quality class |
|---|---|---|---|---|---|
| Uttarakhand | 03 | 0.57 | 6.37 | Slight | B |
| Uttar Pradesh | 20 | 0.68 | 5.18 | Moderate | C |
| Bihar | 04 | 0.71 | 4.92 | Moderate | C |
| West Bengal | 08 | 0.54 | 5.69 | Moderate | C |

*Based on average data

**Table 5.20 : Biological water quality of tributaries of River Ganga Pre-monsoon (April - June, 2017)**

| Tributary | No. of locations | Diversity Score* | Saprobic Score | Biological water quality | Biological water quality class |
|---|---|---|---|---|---|
| River Saloni | 01 | 0.71 | 5.13 | Moderate | C |
| River Ramganga | 01 | 0.45 | 4.40 | Moderate | C |
| River Pandu | 01 | 0.00 | 0.00 | Severe | E |
| River Varuna | 01 | 0.06 | 1.67 | Severe | E |
| River Gomti | 01 | 0.73 | 4.70 | Moderate | C |
| Falgu River | 01 | 0.68 | 5.87 | Moderate | C |

*Based on average data

**Table 5.21 : Biological Water Quality of main stem of River Ganga Post-monsoon (December, 2017 to March, 2018)**

| State | No. of locations | Diversity Score* | Saprobic Score* | Biological water quality | Biological water quality class |
|---|---|---|---|---|---|
| Uttarakhand | 03 | 0.57 | 5.16 | Moderate | C |
| Uttar Pradesh | 20 | 0.61 | 4.88 | Moderate | C |
| Bihar | 04 | 0.68 | 5.00 | Moderate | C |
| West Bengal | 08 | 0.59 | 5.06 | Moderate | C |

*Based on average data

**Table 5.22 : Biological water quality of tributaries of River Ganga Post-monsoon (December, 2017 to March, 2018)**

| Tributary | No. of locations | Diversity Score* | Saprobic Score | Biological water quality | Biological water quality class |
|---|---|---|---|---|---|
| River Saloni | 01 | 0.59 | 5.55 | Moderate | C |
| River Ramganga | 01 | 0.43 | 4.56 | Moderate | C |
| River Pandu | 01 | 0.29 | 4.00 | Heavy | D |
| River Varuna | 01 | 0.54 | 3.60 | Moderate | C |
| River Gomti | 01 | 0.75 | 5.00 | Moderate | C |
| Falgu River | 01 | 0.60 | 5.70 | Moderate | C |

*Based on average data

**Table 5.23 : Biological water quality of main stem of River Ganga Pre-monsoon (April, 2018 to August, 2018)**

| State | No. of locations | Diversity Score* | Saprobic Score* | Biological water quality | Biological water quality class |
|---|---|---|---|---|---|
| Uttarakhand | 03 | 0.56 | 4.03 | Moderate | C |
| Uttar Pradesh | 20 | 0.58 | 5.22 | Moderate | C |
| Bihar | 04 | 0.43 | 5.32 | Moderate | C |
| West Bengal | 08 | 0.62 | 5.40 | Moderate | C |

*Based on average data

**Table 5.24 : Biological water quality of tributaries of River Ganga Pre-monsoon (April, 2018 to August, 2018)**

| Tributary | No. of locations | Diversity Score* | Saprobic Score | Biological water quality | Biological water quality class |
|---|---|---|---|---|---|
| River Saloni | 01 | 0.60 | 5.58 | Moderate | C |
| River Ramganga | 01 | 0.85 | 4.00 | Moderate | C |
| River Pandu | 01 | 0.73 | 4.67 | Moderate | C |
| River Varuna | 01 | 0.33 | 2.40 | Heavy | D |
| River Gomti | 01 | 0.76 | 5.21 | Moderate | C |
| Falgu River | 01 | 0.65 | 5.15 | Moderate | C |

*Based on average data

**Table 5.25 : Biological water quality of main stem of River Ganga 2018-19 Post-monsoon (December 2018 to March, 2019)**

| State | No. of locations | Diversity Score* | Saprobic Score* | Biological water quality | Biological water quality class |
|---|---|---|---|---|---|
| Uttarakhand | 03 | 0.61 | 4.16 | Moderate | C |
| Uttar Pradesh | 20 | 0.52 | 5.08 | Moderate | C |
| Bihar | 04 | 0.69 | 5.43 | Moderate | C |
| West Bengal | -- | -- | -- | -- | -- |

*Based on average data

**Table 5.26 : Biological water quality of tributaries of River Ganga Post-monsoon (December 2018 to March, 2019)**

| Tributary | No. of locations | Diversity Score* | Saprobic Score | Biological water quality | Biological water quality class |
|---|---|---|---|---|---|
| River Saloni | 01 | 0.60 | 5.29 | Moderate | C |
| River Ramganga | 01 | 0.52 | 4.71 | Moderate | C |
| River Pandu | 01 | 0.17 | 1.50 | Severe | E |
| River Varuna | 01 | 0.82 | 3.83 | Moderate | C |
| River Gomti | 01 | 0.73 | 5.29 | Moderate | C |
| Falgu River | 01 | -- | -- | -- | -- |

*Based on average data

### 5.1.12 Yamuna River Water Quality Status at Delhi stretch (2018-19)

Central Pollution Control Board is regularly monitoring about 40 km. long Delhi stretch of Yamuna River from Palla to downstream of Okhla barrage at 4 locations i.e. Palla, Nizamuddin Bridge, Okhla at Kalindi Kunj (Okhla U/s) and Okhla D/s on monthly basis. Water quality trend of the river in this studied stretch during the year 2014-2018 in terms of Dissolved Oxygen (DO), Bio-chemical Oxygen Demand (BOD) and Total Coliform (TC) is depicted in figures 5.2 to 5.4. The values of DO observed during the year 2018 reflect that the level of this parameter was well above the prescribed limit 0f 4.0 mg/l at Palla and is in the range from 4.9 – 10.5 mg/l with annual mean of 7.4 mg/l which is less in comparison with 2017. DO in the river depletes significantly after Wazirabad barrage and remain critical in remaining part of the studied river stretch. The value of this parameter from Wazirabad D/s to Okhla barrage D/s, after joining Shahdara drain was observed in the range of 0.7 – 6.2 mg/l which reflects that DO is generally violating the prescribed standard of 5.0 mg/l at Okhla D/s (except September & October) and 4.0 mg/l at other two locations except in the month of August to October at Nizamuddin bridge and August & September at Okhla U/S. At these monitoring locations the annual average values of DO in 2018 are high in comparison to previous year. BOD at Palla generally meets the prescribed standards of 3 mg/l and was found in the range of 1 – 4 mg/l with annual average of 2.9 mg/l which is almost similar in comparison to 2017. At Okhla D/s BOD value was found well above the limit of 3 mg/l and was in the range of 4-64 mg/l with annual average of 29 mg/l, which indicates reduction in its value as compared with previous year. At remaining two locations i.e. Nizamuddin Bridge and Okhla U/s where BOD is not a criteria parameter, its values were found in the range of 3 – 42 mg/l and 5- 48 mg/l respectively. Comparison of annual average of BOD with previous year data reflects slight incline at Nizamuddin Bridge and declining trend at Okhla U/s. TC was found meeting the standard of 5000 MPN/100 ml at Palla on eight out of twelve rounds of analysis and its values were ranged between 110 - 1600000 MPN/100 ml. At Okhla D/s TC with significantly high counts i.e. 490000 – 160000000 MPN/100 ml was always found violating prescribed standard of 500 MPN/100 ml. At Nizamuddin Bridge and Okhla U/s where TC is also not a criteria parameter, its values were in the range of 240000-39000000 MPN/100 ml & 230000-7000000 MPN/100 ml respectively. Comparison of annual average values observed in the year 2017 and 2018 indicates that at Palla and Okhla D/s TC reflects inclining trend whereas at remaining locations the trend is declining. Free ammonia ($NH_3$) which is a criteria parameter for two locations i.e. Nizamuddin Bridge and Okhla U/s, was found exceeding the prescribed limit of 1.2 mg/l except once at Nizamuddin Bridge. The annual average of this parameter at Nizamuddin Bridge and Okhla U/s was 18.3 mg/l and 10.7 mg/l respectively. At Palla free ammonia was in the range of Below detection limit (BDL) – 3.5 mg/l, whereas, at Okhla D/s it was in the range of 1.2 – 40.7mg/l. In comparison to 2017, annual average of free ammonia was showing inclining trend at Palla and declining trend at Okhla U/s whereas in remaining two locations it is inclining. As observed in the year 2017, in 2018 also pH was the only parameter that meets the prescribed standards of 6.0 – 9.0 for Palla and 7.1 – 8.0 for the remaining three studied locations.

Yamuna River water quality in Delhi stretch not only depends on wastewater that it received from various drains but also depends on other factors also e.g. quantity of water received from Western Yamuna canal through Najafgarh drain, input from Hindon cut canal, quantity of fresh water released from Wazirabad and Okhla barrage, fluctuations in the intensity and duration of rainfall etc.

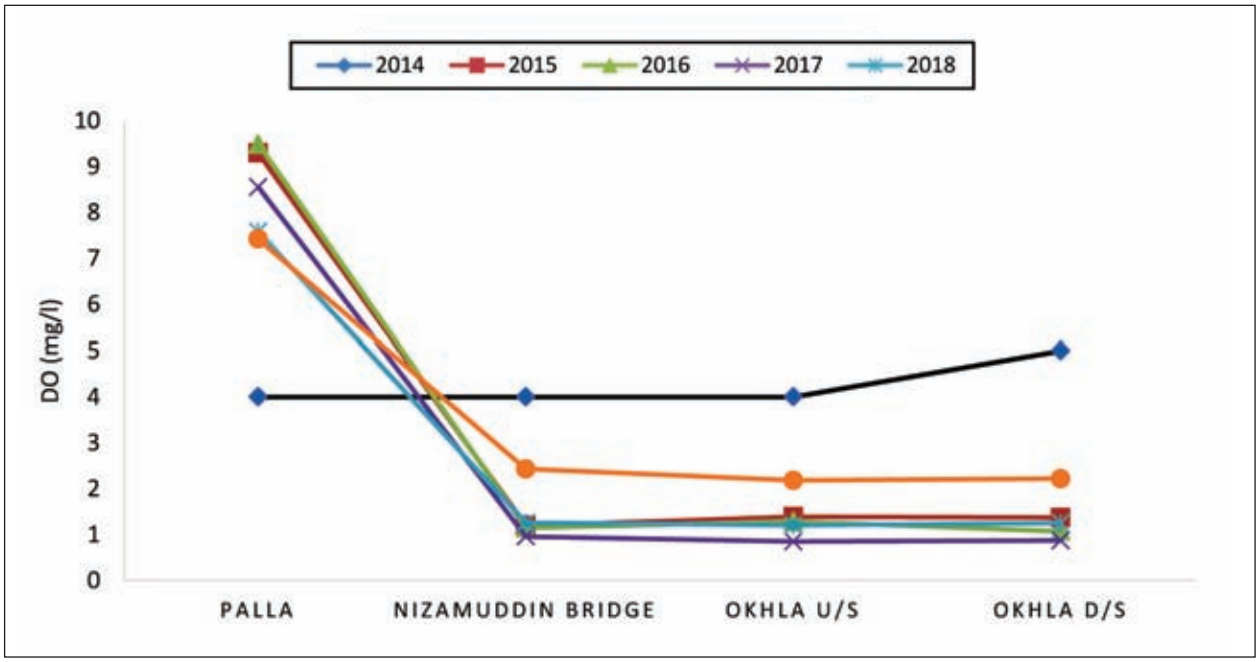



**Figure 5.2 : Water quality trend of river Yamuna in terms of DO**

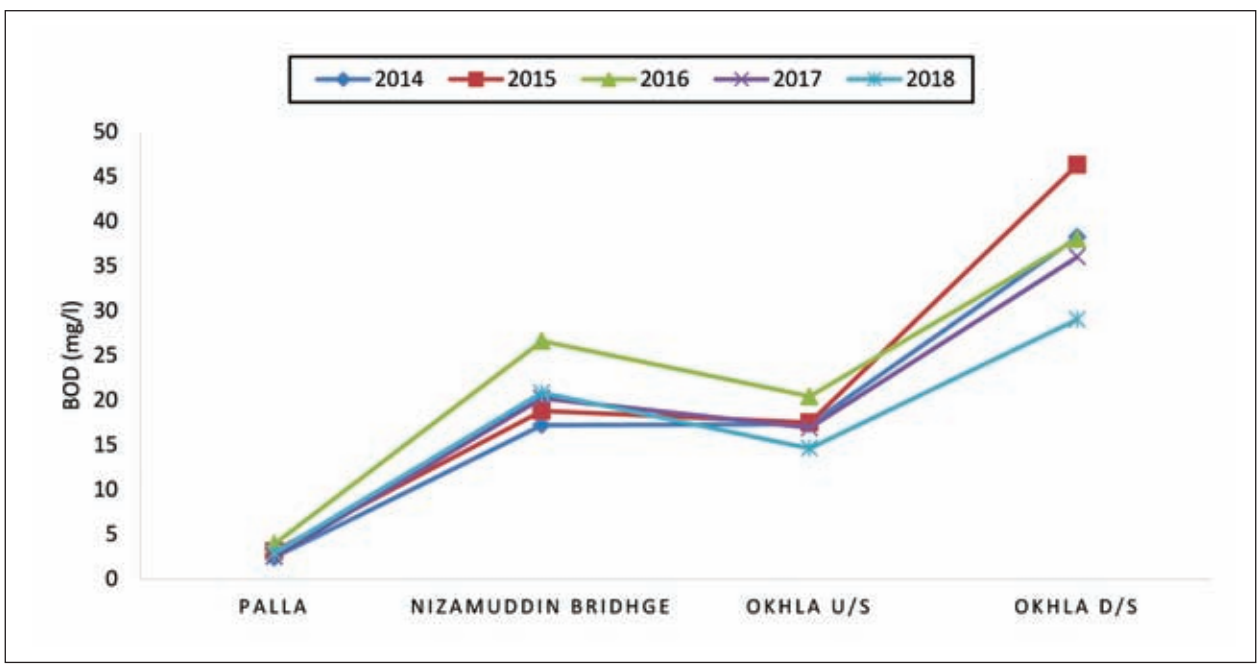



**Figure 5.3 : Water quality trend of river Yamuna in terms of BOD**

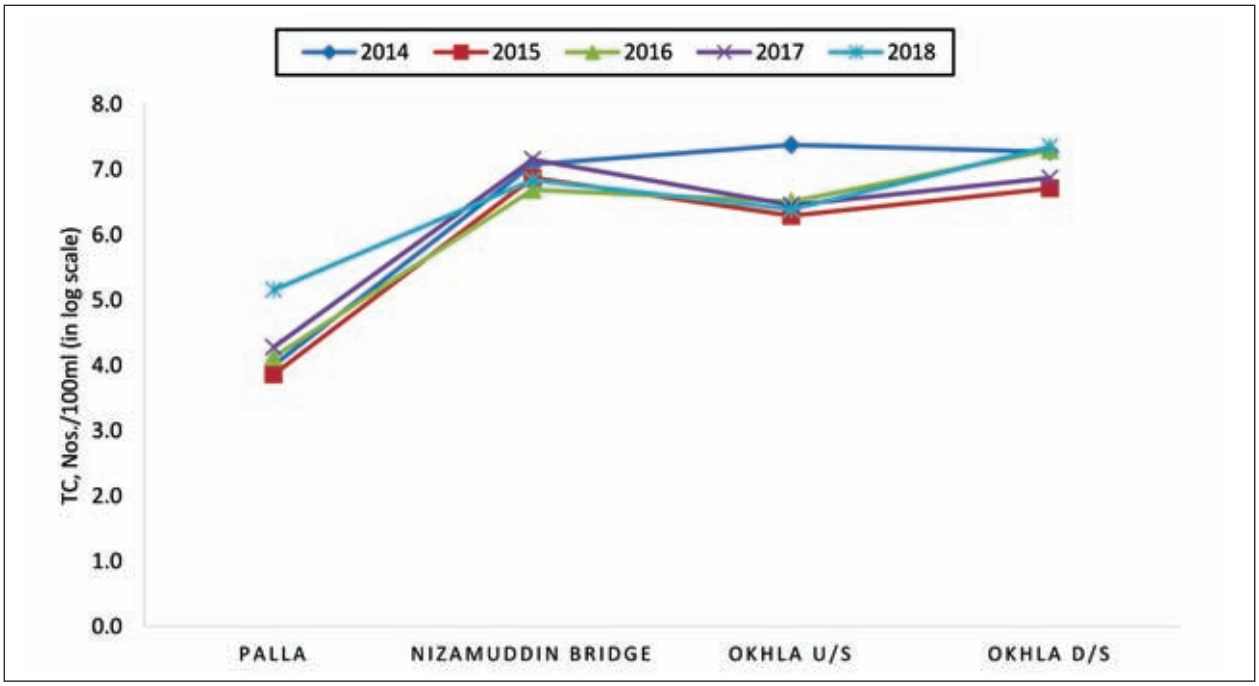



**Figure 5.4 : Water quality trend of river Yamuna in terms of TC**

Biological water quality assessment of River Yamuna was initiated in October, 2018. Biological testing of River Yamuna was carried out at 14 locations from October 2018 to March, 2019. Biological water quality of all locations is presented in Table 5.27.

**Table 5.27: Biological water quality of River Yamuna during 2018-19**

| Sr. No. | Location Name | Location Code | 2018-19 | | | |
|---|---|---|---|---|---|---|
| | | | SS | DS | BWQ | BWQC |
| 1. | Okhla Barrage | RY-Ok | 3.4 | 0.44 | Moderate Pollution | C |
| 2. | Nizamuddin Bridge | RY-Nz | 4.57 | 0.19 | Heavy Pollution | D |
| 3. | Palla | RY-PL | 5.1 | 0.51 | Moderate Pollution | C |
| 4. | Panipat U/S | RY-PP U/S | 4.33 | 0.22 | Heavy Pollution | D |
| 5. | Panipat D/S | RY-PP D/S | 4.45 | 0.61 | Moderate Pollution | C |
| 6. | Manjhawali | RY-MnJh | 4.6 | 0.45 | Moderate Pollution | C |
| 7. | Palwal | RY-PW | 4.4 | 0.22 | Heavy Pollution | D |
| 8. | Kosi kalan | RY-KK | 4.9 | 0.83 | Moderate Pollution | C |
| 9. | Mathura | Mathura U/S | 4.56 | 0.79 | Moderate Pollution | C |
| | | Mathura D/S | 3.55 | 0.39 | Heavy Pollution | D |
| 10. | Agra | Agra U/S | 4.44 | 0.57 | Moderate Pollution | C |
| | | Agra U/S | 1.5 | 0.12 | Severe Pollution | E |
| 11. | Auriya | Auriya (B) | 5.27 | 0.64 | Moderate Pollution | C |

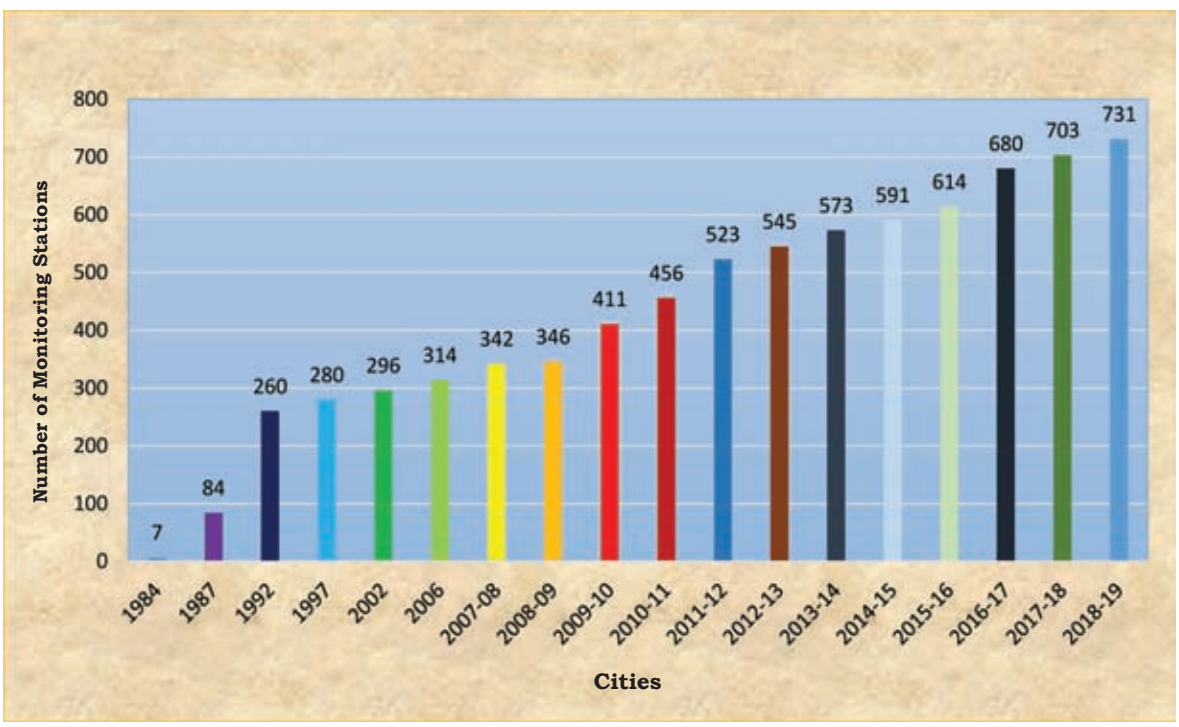
| Sr. No. | Location Name | Location Code | 2018-19 | | | |
|---|---|---|---|---|---|---|
| | | | SS | DS | BWQ | BWQC |
| 12. | Hamirpur | Hamirpur-UP-B | 5.08 | 0.69 | Moderate Pollution | C |
| 13. | Arail Ghat, Allahabad | RY-Allahabad-B | 4.9 | 0.37 | Moderate Pollution | C |
| 14. | Sangam at Allahabad | UP-47-B | 4.9 | 0.67 | Moderate Pollution | C |

## 5.2 AMBIENT AIR QUALITY MONITORING PROGRAMME

In order to prevent, control and abate air pollution, the Air (Prevention and Control of Pollution) Act was enacted in 1981. According to Section 2(b) of Air (Prevention and control of pollution) Act, 1981 'Air pollution' has been defined as 'the presence in the atmosphere of any air pollutant.' As per Section 2(a) of Air (Prevention and control of pollution) Act, 1981 'Air Pollutant' has been defined as 'any solid, liquid or gaseous substance [(including noise)] present in the atmosphere in such concentration as may be or tend to be injurious to human beings or other living creatures or plants or property or environment'. Therefore, ambient air quality standard is developed as a policy guideline that regulates the effect of human activity upon the environment so that pollutant emission into the air can be regulated. Standards may specify a desired state or limit alterations.

### 5.2.1 National Ambient Air Quality Monitoring Programme (NAMP)

Central Pollution Control Board is executing a nation-wide National Air Quality Monitoring Programme (NAMP). NAMP was started in 1984 with 7 stations in Agra and Anpara. The growth of operating Ambient Air Quality Monitoring Stations in the country is given in figure below. The ambient air quality monitoring network has 731 operating stations covering 312 cities/towns in 29 States and 6 Union Territories.



### Parameters monitored under NAMP

Under NAMP three criteria pollutants viz. $PM_{10}$ (Particulate Matter having an aerodynamic diameter less than or equal to 10 µm), Sulphur dioxide ($SO_2$) and Nitrogen dioxide ($NO_2$) were identified for regular monitoring at all locations. Other notified parameters like Carbon monoxide (CO), Ammonia ($NH_3$), Ozone ($O_3$), $PM_{2.5}$ (Particulate Matter having an aerodynamic diameter less than or equal to 2.5 µm), Benzo(a)pyrene {B(a)P}, Lead (Pb) and Nickel (Ni) are being monitored at selected locations. The monitoring of meteorological parameters such as wind speed, wind direction, relative humidity and temperature has been also integrated with the monitoring of air quality.

### Objectives of NAMP

i) To determine the status and trends of ambient air quality;

ii) To ascertain whether the prescribed ambient air quality standards are violated;

iii) To identify non-attainment cities with respect to national standards and;

iv) To obtain the knowledge and understanding necessary for developing preventive and corrective measures.

## 5.2.2 Non-attainment cities

CPCB has identified 102 non-attainment cities, based on data for the period 2011 – 2015 and WHO report 2014/2018 as listed below:

| State | S.No. | City |
|---|---|---|
| Andhra Pradesh | 1 | Guntur |
| | 2 | Kurnool |
| | 3 | Nellore |
| | 4 | Vijayawada |
| | 5 | Vishakhapatnam |
| Assam | 6 | Guwahati |
| | 7 | Nagaon |
| | 8 | Nalbari |
| | 9 | Sibsagar |
| | 10 | Silchar |
| Chandigarh | 11 | Chandigarh |
| Chhattisgarh | 12 | Bhilai |
| | 13 | Korba |
| | 14 | Raipur |
| Delhi | 15 | Delhi |
| Gujarat | 16 | Surat |
| | 17 | Ahmedabad |

| State | S.No. | City |
|---|---|---|
| Himachal Pradesh | 18 | Baddi |
| | 19 | Damtal |
| | 20 | Kala Amb |
| | 21 | Nalagarh |
| | 22 | Paonta Sahib |
| | 23 | Parwanoo |
| | 24 | Sunder Nagar |
| Jammu & Kashmir | 25 | Jammu |
| | 26 | Srinagar |
| Jharkhand | 27 | Dhanbad |
| Karnataka | 28 | Bangalore |
| | 29 | Devanagere |
| | 30 | Gulburga |
| | 31 | Hubli-Dharwad |
| Madhya Pradesh | 32 | Bhopal |
| | 33 | Dewas |
| | 34 | Indore |
| | 35 | Sagar |
| | 36 | Ujjain |
| | 37 | Gwalior |
| Maharashtra | 38 | Akola |
| | 39 | Amravati |
| | 40 | Aurangabad |
| | 41 | Badlapur |
| | 42 | Chandrapur |
| | 43 | Jalgaon |
| | 44 | Jalna |
| | 45 | Kolhapur |
| | 46 | Latur |
| | 47 | Mumbai |

| State | S.No. | City |
|---|---|---|
| | 48 | Nagpur |
| | 49 | Nashik |
| | 50 | Navi Mumbai |
| | 51 | Pune |
| | 52 | Sangli |
| | 53 | Solapur |
| | 54 | Ulhasnagar |
| Meghalaya | 55 | Byrnihat |
| Nagaland | 56 | Dimapur |
| | 57 | Kohima |
| Orissa | 58 | Angul |
| | 59 | Balasore |
| | 60 | Bhubaneswar |
| | 61 | Cuttack |
| | 62 | Rourkela |
| | 63 | Talcher |
| Punjab | 64 | Dera Bassi |
| | 65 | Gobindgarh |
| | 66 | Jalandhar |
| | 67 | Khanna |
| | 68 | Ludhiana |
| | 69 | Naya Nangal |
| | 70 | Dera Baba |
| | 71 | Patiala |
| | 72 | Amritsar |
| Rajasthan | 73 | Alwar |
| | 74 | Jaipur |
| | 75 | Jodhpur |
| | 76 | Kota |
| | 77 | Udaipur |
| Tamilnadu | 78 | Thoothukudi |
| Telangana | 79 | Hyderabad |
| | 80 | Nalgonda |
| | 81 | Patancheruvu |

| State | S.No. | City |
|---|---|---|
| Uttar Pradesh | 82 | Agra |
| | 83 | Allahabad |
| | 84 | Anpara |
| | 85 | Bareily |
| | 86 | Firozabad |
| | 87 | Gajraula |
| | 88 | Ghaziabad |
| | 89 | Jhansi |
| | 90 | Kanpur |
| | 91 | Khurja |
| | 92 | Lucknow |
| | 93 | Moradabad |
| | 94 | Noida |
| | 95 | Raebareli |
| | 96 | Varanasi |
| Uttarakhand | 97 | Kashipur |
| | 98 | Rishikesh |
| West Bengal | 99 | Kolkata |
| Bihar | 100 | Patna |
| | 101 | Gaya |
| | 102 | Muzaffarpur |

Seven Regional (East, West, North-I, North-II, South, North-East, and Central) workshops were organized to sensitize SPCBs and Stakeholders to develop City Specific Action plan for control of air pollution in these non-attainment towns/cities. However, as per Hon'ble NGT order dated October 08, 2018 of O.A. No 681/2018, all 102 Non-attainment cities are directed to formulate a six member Air Quality Monitoring Committee (AQMC) comprising of Directors of Environment, Transport, Industries, Urban Development, Agriculture and Member Secretary, State Pollution Control Board or Committee of the concerned State and submit city action plan approved by the committee. AQMC, approved plans are examined by a three member committee constituted by Hon'ble NGT and on the recommendations of the said Committee, the Chairman, CPCB shall approve the plans. As of now, 96 action plans have been received to CPCB out of which 81 action plan has been approved for ground implementation. The plan identifies key components like Air Quality Monitoring Network, Identification of Major Air Polluting Source, Action Points with Short/Mid/Long term Strategies. The city plans are implemented on ground with a clear road map of actions, timeframe and responsible agencies.

### 5.2.3 Status of Ambient Air Quality in million plus cities

All the cities belong to the Industrial, Residential, Rural & others areas except for Agra and Srinagar which falls in the Ecologically Sensitive area category. The analysis of air quality data of 44 cities during 2018 with respect to $SO_2$ revealed that all 44 cities (100%) are within the National Ambient Air Quality Standard (NAAQS). As for $NO_2$, 14 cities (33%) namely Allahabad, Delhi, Dombivali, Ghaziabad, Howrah, Jodhpur, Kanpur, Kolkata, Meerut, Navi-Mumbai, Patna, Pimpri Chinchwad, Pune , Thane exceed the NAAQS. With respect to $PM_{10}$, 43 cities (98%) do not comply with the NAAQS. With respect to $PM_{2.5}$, out of 21 cities monitored, 20 cities (95%) exceed the NAAQS. Details are given in Table below:

**Table 5.28 : Air Quality in Million Plus Cities of India**

| Sl. No. | State | Cities | NO. of operating stations under NAMP | Concentration in µg/m³ | | | |
|---|---|---|---|---|---|---|---|
| | | | | $SO_2$ | $NO_2$ | $PM_{10}$ | $PM_{2.5}$ |
| 1. | Uttar Pradesh | Agra | 6 | 4 | 22 | 208 | 106 |
| 2. | Gujarat | Ahmedabad | 9 | 16 | 29 | 236 | 73 |
| 3. | Uttar Pradesh | Allahabad | 5 | 4 | 45 | 231 | - |
| 4. | Punjab | Amritsar | 3 | 11 | 27 | 157 | - |
| 5. | Maharashtra | Aurangabad | 4 | 13 | 35 | 70 | - |
| 6. | Karnataka | Bangalore | 9 | 2 | 30 | 90 | 47 |
| 7. | Madhya Pradesh | Bhopal | 8 | 7 | 14 | 134 | 59 |
| 8. | Tamilnadu | Chennai | 11 | 9 | 16 | 78 | 113 |
| 9. | Tamilnadu | Coimbatore | 3 | 6 | 23 | 54 | - |
| 10. | Delhi | Delhi | 10 | 7 | 68 | 234 | 102 |
| 11. | Jharkhand | Dhanbad | 3 | 14 | 37 | 264 | - |
| 12. | Maharashtra | Dombivali/Ambernath | 2 | 26 | 66 | 151 | - |
| 13. | Uttar Pradesh | Ghaziabad | 2 | 21 | 43 | 244 | 104 |
| 14. | Madhya Pradesh | Gwalior | 2 | 13 | 21 | 134 | 62 |
| 15. | West Bengal | Howrah | 4 | 11 | 72 | 179 | 97 |
| 16. | Telangana | Hyderabad | 10 | 5 | 30 | 105 | 55 |
| 17. | Madhya Pradesh | Indore | 3 | 10 | 19 | 88 | 41 |
| 18. | Madhya Pradesh | Jabalpur | 2 | 7 | 17 | 119 | 42 |
| 19. | Rajasthan | Jaipur | 6 | 8 | 32 | 159 | - |
| 20. | Rajasthan | Jodhpur | 9 | 7 | 47 | 219 | - |
| 21. | Uttar Pradesh | Kanpur | 9 | 7 | 47 | 217 | - |
| 22. | West Bengal | Kolkata | 20 | 6 | 44 | 148 | 86 |
| 23. | Rajasthan | Kota | 6 | 7 | 28 | 152 | - |
| 24. | Uttar Pradesh | Lucknow | 8 | 8 | 33 | 120 | 108 |
| 25. | Punjab | Ludhiana | 4 | 9 | 32 | 168 | - |
| 26. | Tamilnadu | Madurai | 3 | 12 | 20 | 84 | - |
| 27. | Uttar Pradesh | Meerut | 2 | 7 | 58 | 177 | |

| Sl. No. | State | Cities | NO. of operating stations under NAMP | Concentration in µg/m³ | | | |
|---|---|---|---|---|---|---|---|
| | | | | $SO_2$ | $NO_2$ | $PM_{10}$ | $PM_{2.5}$ |
| 28. | Maharashtra | Mumbai | 3 | 2 | 22 | 167 | 46 |
| 29. | Maharashtra | Nagpur | 7 | 10 | 28 | 102 | 44 |
| 30. | Maharashtra | Nashik | 4 | 12 | 21 | 85 | - |
| 31. | Maharashtra | Navi Mumbai | 6 | 19 | 47 | 71 | - |
| 32. | Bihar | Patna | 2 | 5 | 51 | 207 | - |
| 33. | Maharashtra | Pimpri Chinchwad | 1 | 39 | 66 | 86 | - |
| 34. | Maharashtra | Pune | 3 | 37 | 75 | 106 | - |
| 35. | Chattisgarh | Raipur | 3 | 14 | 20 | 65 | - |
| 36. | Gujarat | Rajkot | 2 | 19 | 23 | 203 | 64 |
| 37. | Jharkhand | Ranchi | 1 | 18 | 36 | 122 | |
| 38. | Jammu & Kashmir | Shrinagar | 4 | - | - | 134 | - |
| 39. | Gujarat | Surat | 3 | 22 | 29 | 176 | 57 |
| 40. | Maharashtra | Thane | 3 | 17 | 44 | 108 | - |
| 41. | Gujarat | Vadodara | 5 | 20 | 25 | 188 | 60 |
| 42. | Uttar Pradesh | Varanasi | 5 | 9 | 34 | 189 | |
| 43. | Maharashtra | Vasai-virar | 0 | # | # | # | # |
| 44. | Andhra Pradesh | Vijaywada | 3 | 5 | 23 | 87 | 29 |
| 45. | Andhra Pradesh | Vishakhapatnam | 8 | 10 | 20 | 77 | 49 |

*Note: '-' Data not available.; # no monitoring station in the city ; NAAQS of 50 µg/m³ for $SO_2$, 40 µg/m³ for $NO_2$, and 60 µg/m³ for $PM_{10}$ for Residential/ industrial / other area & 20 µg/m³ for $SO_2$, 30 µg/m³ for $NO_2$, and 60 µg/m³ for Ecologically sensitive area; Data for 2018 is as available on 08.05.2019*

The air quality scenario with respect to $SO_2$, $NO_2$, $PM_{10}$ and $PM_{2.5}$ in million plus cities during 2018 is represented in figures 5.5, 5.6, 5.7 and 5.8.

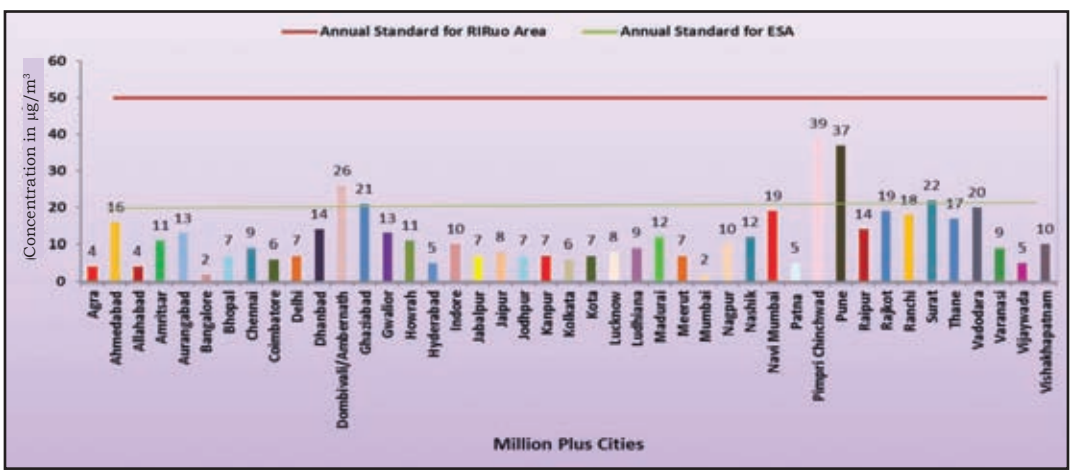



Figure 5.5: $SO_2$ levels (annual) in million plus cities

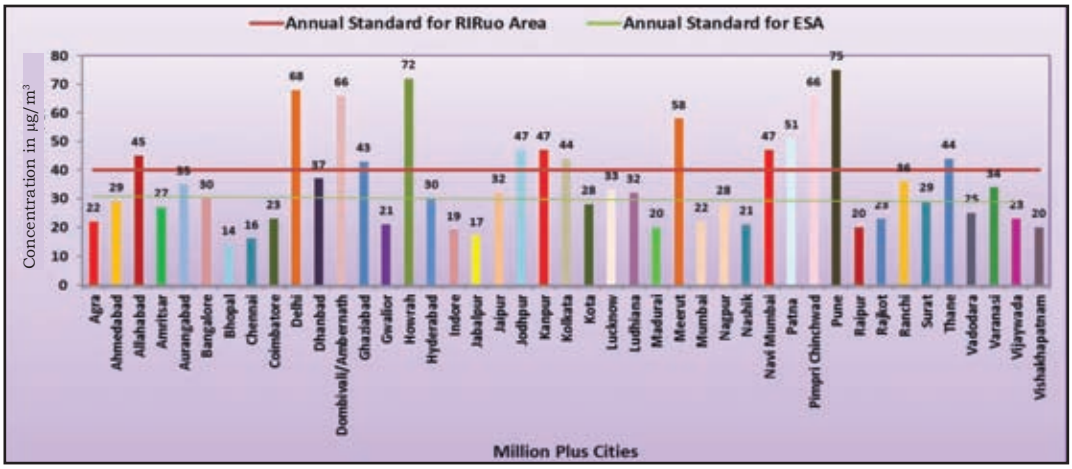



Figure 5.6: $NO_2$ levels (annual) in million plus cities

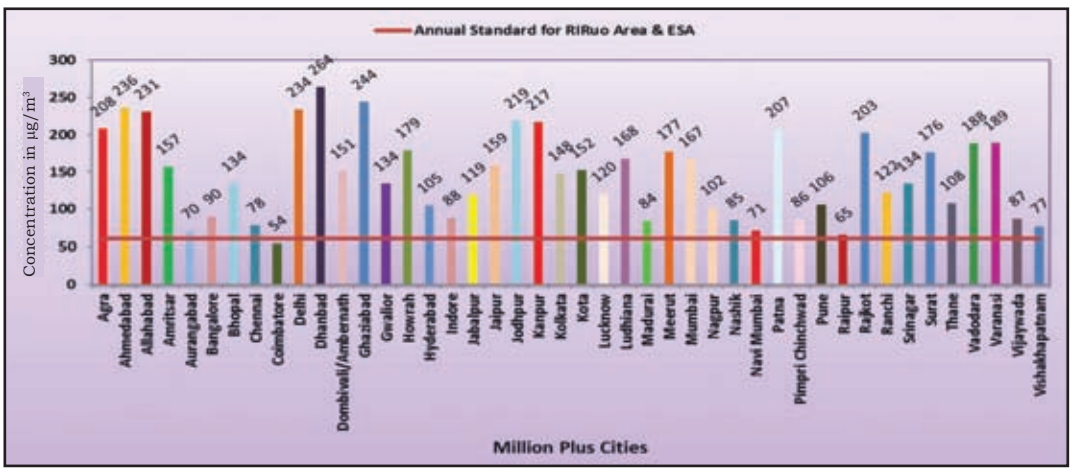



Figure 5.7: $PM_{10}$ levels (annual) in million plus cities

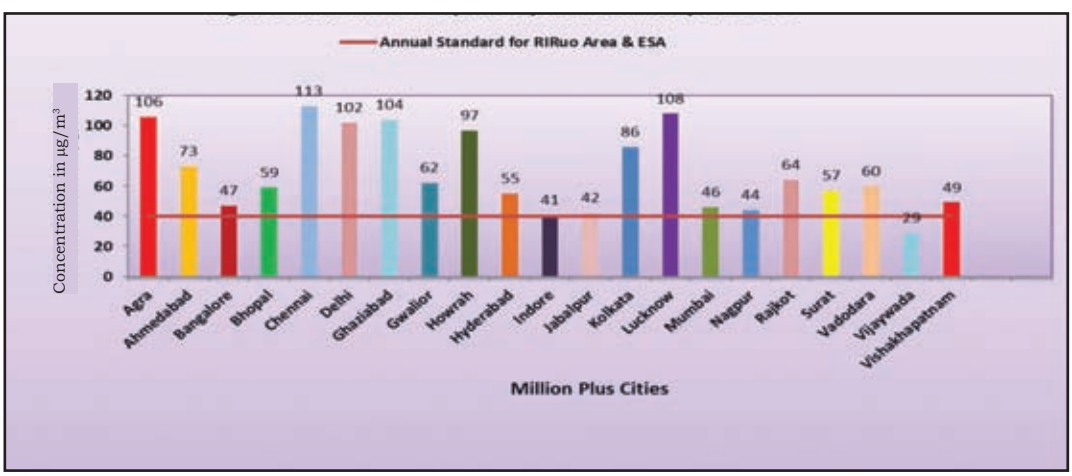
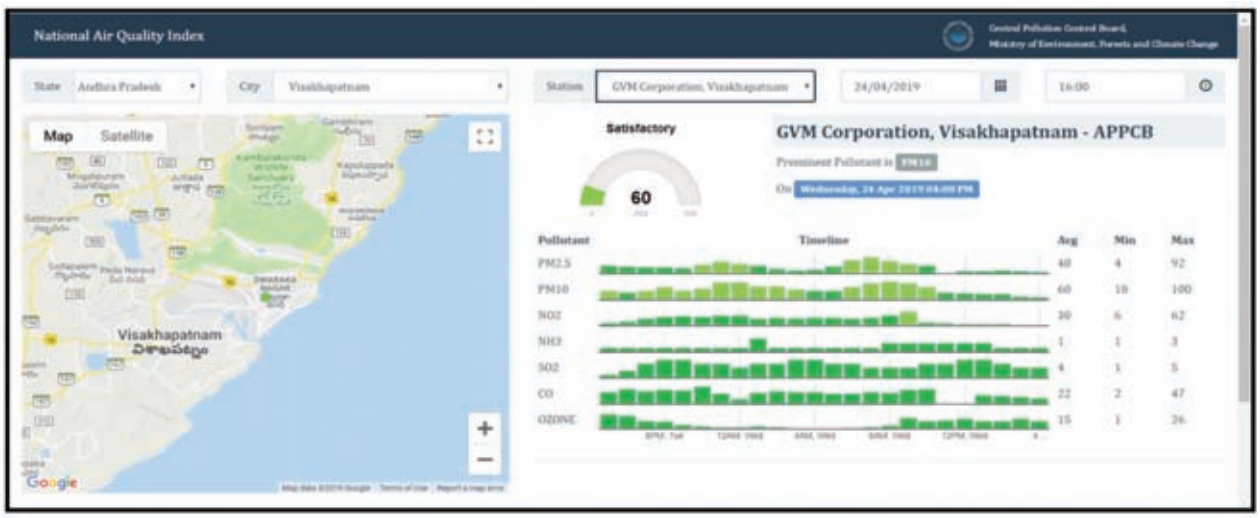



Figure 5.8: $PM_{2.5}$ levels (annual) in million plus cities

### 5.2.4 Integrated Data transmission from Real-Time Systems to CPCB: Continuous Ambient Air Quality Monitoring Stations (CAAQMS) Network

CPCB, SPCBs and PCCs are monitoring ambient air quality of different cities and publishing real-time data in public domain for taking corrective measures in time. A National Air Quality Index, which combines the effect of all air quality parameters and generates a single number, has been developed by CPCB. The National AQI communicates air quality in simple terms of one number and one color for general public. Air Quality Index (AQI), inaugurated by the Hon'ble Prime Minister of India, is being continuously published on a web portal of CPCB, updated on hourly basis.




The AQI software fetches the ambient air quality data from the CAAQM stations and publishes the values of AQI for each parameter at each station. There is no human interference in the process of fetching the data and publishing it. This application has become very popular and has created awareness in the field of environment. Media has also started reporting the air quality in the country on day-to-day basis, especially in Delhi & NCR. Now, this network has been expanded by integrating 165 stations located in 101 cities of 18 States and list is given in Table-5.29.

**Table-5.29 : List of CAAQMS Stations as on 31st March 2019**

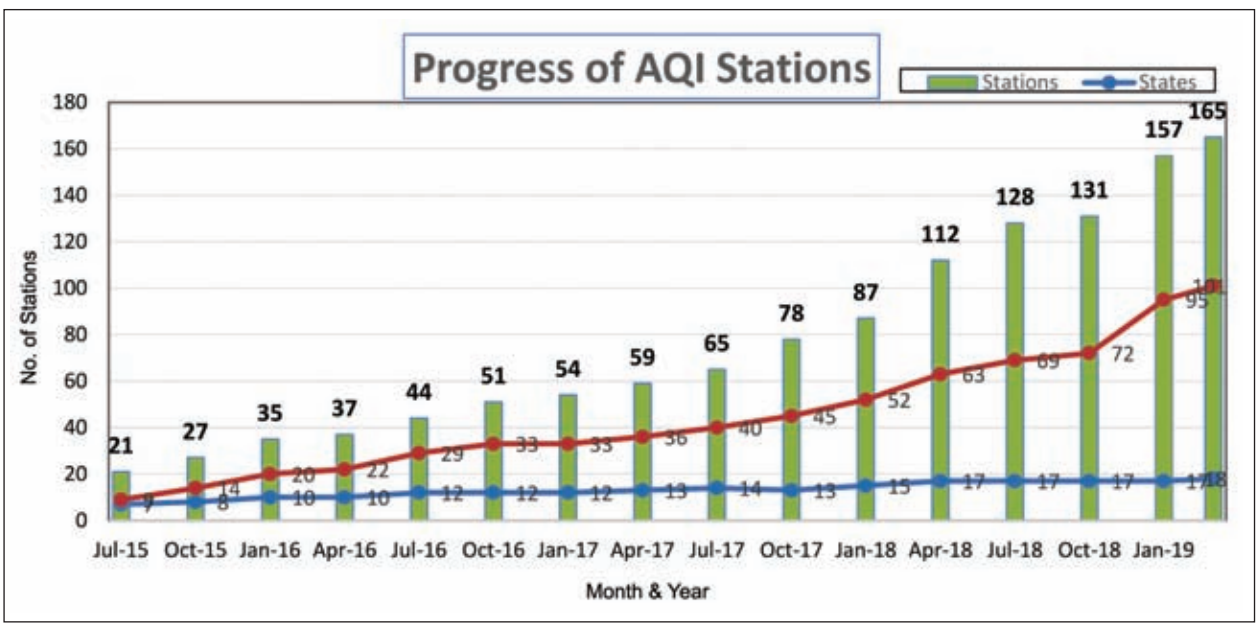
| Sl. No | State | No of Cities | No. of Stations |
|---|---|---|---|
| 1 | Andhra Pradesh | 5 | 5 |
| 2 | Assam | 1 | 1 |
| 3 | Bihar | 3 | 3 |
| 4 | Delhi | 1 | 37 |
| 5 | Gujarat | 5 | 5 |
| 6 | Haryana | 23 | 24 |
| 7 | Jharkhand | 1 | 1 |
| 8 | Karnataka | 4 | 13 |
| 9 | Kerala | 1 | 1 |
| 10 | Madhya Pradesh | 9 | 9 |
| 11 | Maharashtra | 9 | 10 |

| Sl. No | State | No of Cities | No. of Stations |
|---|---|---|---|
| 12 | Odisha | 2 | 2 |
| 13 | Punjab | 8 | 8 |
| 14 | Rajasthan | 8 | 10 |
| 15 | Tamil Nadu | 1 | 3 |
| 16 | Telangana | 1 | 6 |
| 17 | Uttar Pradesh | 13 | 19 |
| 18 | West Bengal | 6 | 8 |
| **Total** | **18 States** | **101 Cities** | 165 Stations |

**Implementing organizations along with details of responsibilities:**

**(i) SPCBs/PCCs:** Installation and O&M of the CAAQM stations.

**(ii) CPCB:** Installation and O&M of CAAQM stations and integration of data from all the CAAQMS stations installed by different organizations on a single platform and generation of AQI.



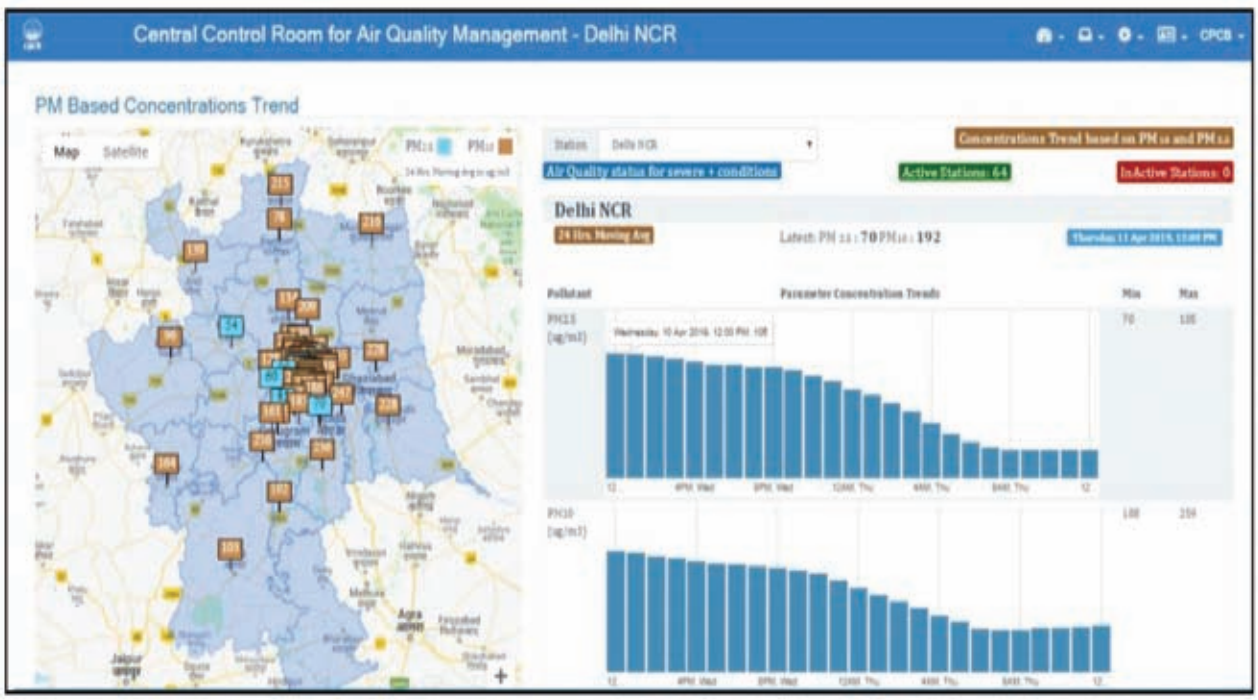

### 5.2.5 Central Control Room (CCR) for Managing Quick Graded Response to control Air Pollution in Delhi-NCR

Air pollution is increasing day by day, especially in Delhi-NCR and air pollution levels are quite high. Therefore, Central and State Governments have set up 50 continuous ambient air quality monitoring stations. Indian Meteorology Department (IMD) is also operating ~10 stations in Delhi-NCR.

CPCB has placed a system called CCR, which collects the data from all of these CAAQM Stations at a single location. The data is being collected on minute to minute basis and it is being converted into Air Quality Index (displayed live) which has been called as National Air Quality Index. Since, this software contains different modules like complaint management, the stake holders like NDMC, PWD, DDA, Department of Transport & Delhi

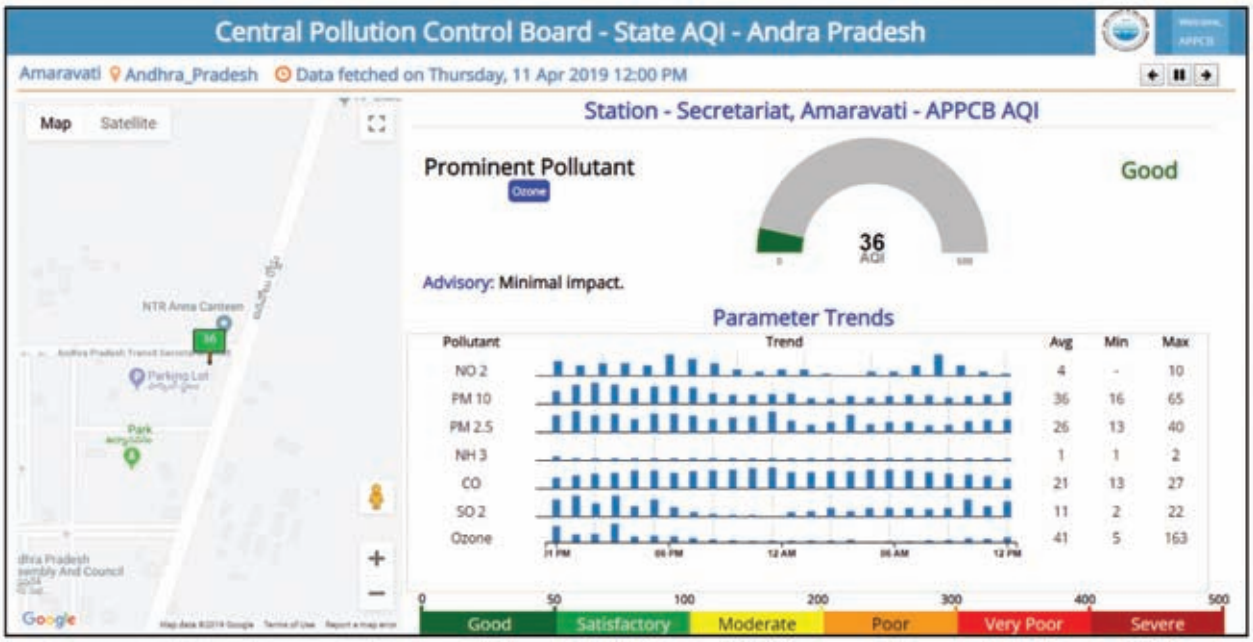
Traffic Police have been provided controlled access for effective functioning. The system generates the data in the form of graphs and bar charts as shown in figure below and based on this data, action points are being generated as per Graded Response Action Plan for control of air pollution. CPCB has also created Social Media Platforms like Facebook, Twitter and Email to receive Public Complaints and effectively redress the complaints.

**Format for CCR for Air Quality Management- Delhi NCR**




**Particulate Matter concentration based Dashboard of CCR**

**CAAQM Station's Spatial Distribution**




### 5.2.6 Initiatives taken for Air Pollution Mitigation:

Several new/ innovative technologies are being proposed towards air quality management. CPCB has been collaborating with DST in order to assess all proposals on air pollution mitigation technologies received for consideration for funding as well as demonstration.

So far three pilot projects have been sanctioned for deployment in Delhi under EPC funds:

1. To demonstrate the effectiveness of Air Pollution Mitigation by "Pariyayantra Filtration" in 30 buses by Manav Rachna International University;
2. Deployment and Evaluation of 54 units Air Purification Units (WAYU) for 5 Traffic Junction Pollution Abatement in Delhi by NEERI;
3. Control of Dust Emission using Dust Suppressant at three locations.

- **Clean Air Campaign – To check air polluting activities pre and post Diwali**

A special campaign called "Clean Air Campaign" was organized during November 01, 2018 to November 10, 2018. For this purpose, 52 teams had been constituted including members from Ministry of Environment, Forest & Climate Change, Central Pollution Control Board and Government of Delhi and NCR towns (Noida, Gurugram, Greater Noida, Faridabad and Ghaziabad) to take on-spot ground actions to control air polluting activities and to sensitize public to ensure their effective participation in future.

- Total 2619 complaints were lodged during Clean Air Campaign and 454 Challans were issued.
- Major violations observed were Construction and demolition activities, open dumping of garbage, open garbage/leaf burning, road dust, unpaved road/pit, traffic congestion and industrial emission etc.

- **Public Complaints regarding air polluting activities**

Public Complaints regarding prominent air pollution issues in Delhi NCR were taken through '**Sameer App**', **'e-mails' (Aircomplaints.cpcb@gov.in)** and **'Social Media Networks' (Facebook and Twitter)** to connect with general public and to resolve their problems regarding air pollution in Nation Capital as well as NCR town (Noida, Gurugram, Greater Noida, Faridabad and Ghaziabad).

- ✓ Complaints were lodged during the campaign through Twitter, Facebook, e-mail and Sameer.
- ✓ Immediate actions were taken on the complaints. Every complaint lodged was immediately forwarded to Teams of respective areas and immediate action as required was taken.

- **National Clean Air Programme (NCAP):**

A time bound national level strategy for pan India implementation to tackle the increasing air pollution problem across the country in a comprehensive manner in the form of National Clean Air Programme (NCAP) has been launched by Ministry of Environment, Forest and Climate Change.

"Collaborative and participatory approach involving relevant Central Ministries, State Governments, local bodies and other Stakeholders with focus on all sources of pollution forms the crux of the Programme." that taking into account the available international experiences and national studies, the tentative national level target of 20%–30% reduction of $PM_{2.5}$ and $PM_{10}$ concentration by 2024 is proposed under the NCAP taking 2017 as the base year for the comparison of concentration. "Overall objective of the NCAP is comprehensive mitigation actions for prevention, control and abatement of air pollution besides augmenting the air quality monitoring network across the country and strengthening the awareness and capacity building activities

## 5.3 NATIONAL AMBIENT NOISE MONITORING NETWORK

CPCB in association with State Pollution Control Boards has established National Ambient Noise Monitoring Network in 07 metropolitan cities and installed 70 Nos. of Noise Monitoring System in Bengaluru, Chennai, Delhi, Hyderabad, Kolkata, Lucknow and Mumbai (10 Nos. of stations in each city). Based on the Ambient Noise Level data for the year 2018, following observations are made:

1. During day time, 16 out of 16 stations in residential zone, 23 out of 25 in commercial zone, 2 out of 12 in industrial zone and 17 out of 17 in silence zone are non-complying with ambient noise standards.
2. Similarly, during night time 16 out of 16 stations in residential zone, 25 out of 25 in commercial zone, 2 out of 12 in industrial zone and 17 out of 17 in silence zone are non-complying with ambient noise standards.

## Non Complying Location of Seven Metro Cities
## (With Respect to Ambient Noise Standards)

| | Zones | Residential | | Commercial | | Industrial | | Silence | |
|---|---|---|---|---|---|---|---|---|---|
| | | Prescribed Limits dB(A) | | | | | | | |
| | | Day | Night | Day | Night | Day | Night | Day | Night |
| | | 55 dB(A) | 45 dB(A) | 65 dB(A) | 55 dB(A) | 75 dB(A) | 70 dB(A) | 50 dB(A) | 40 dB(A) |
| Sl. No. | Name of the City | Non Complying /Total Stations | Non Complying /Total Stations | Non Complying /Total Stations | Non Complying /Total Stations | Non Complying /Total Stations | Non Complying /Total Stations | Non Complying /Total Stations | Non Complying /Total Stations |
| 1 | **Bangalore** | 3/3 | 3/3 | 3/3 | 3/3 | 0/2 | 0/2 | 2/2 | 2/2 |
| 2 | **Chennai** | 3/3 | 3/3 | 4/4 | 4/4 | 1/1 | 1/1 | 2/2 | 2/2 |
| 3 | **Delhi** | 2/2 | 2/2 | 3/4 | 4/4 | 0/0 | 0/0 | 4/4 | 4/4 |
| 4 | **Hyderabad** | 2/2 | 2/2 | 4/4 | 4/4 | 1/2 | 1/2 | 2/2 | 2/2 |
| 5 | **Kolkata** | 3/3 | 3/3 | 2/3 | 2/3 | 0/2 | 0/2 | 2/2 | 2/2 |
| 6 | **Lucknow** | 2/2 | 2/2 | 3/3 | 2/3 | 0/2 | 0/2 | 3/3 | 3/3 |
| 7 | **Mumbai** | 1/1 | 1/1 | 3/4 | 3/4 | 0/3 | 0/3 | 2/2 | 2/2 |
| | TOTAL | 16/16 | 16/16 | 23/25 | 25/25 | 2/12 | 2/12 | 17/17 | 17/17 |

Noise Stations Data for 2018 in dB(A)

# CHAPTER - VI

# PRESENT STATE OF ENVIRONMENT, ENVIRONMENTAL PROBLEMS AND COUNTER MEASURES

## 6.1 Ambient Air Quality of Delhi:

A comparative profile of ambient air quality being monitored in the city of Delhi for the year 2017 & 2018 is presented as under:

- **Sulphur dioxide ($SO_2$)**

The annual mean concentration of $SO_2$ during the years 2017 - 2018 is shown in Figure 6.1. The concentration of sulphur dioxide recorded at all the locations was slightly lower with respect to previous year except Pitampura and well within the national standard.

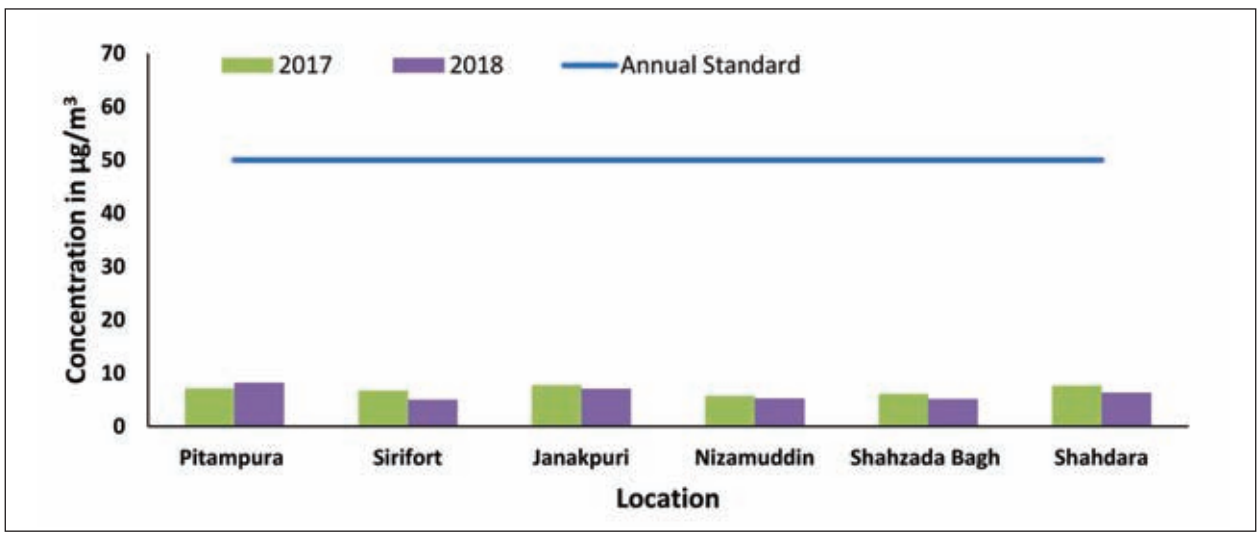



**Figure 6.1 Sulphur dioxide concentration in Delhi (2017 - 2018)**

- **Nitrogen dioxide ($NO_2$)**

The annual mean concentration of $NO_2$ during the year 2017 - 2018 is shown in Figure 6.2. The concentration of nitrogen dioxide recorded at all locations except Sirifort shows an increasing trend with respect to previous year. The concentration of $NO_2$ ranged between 53 µg/m$^3$ (Sirifort) to 71 µg/m$^3$ (Shahzada Bagh) during the year 2018. The concentration of $NO_2$ exceeded the national standards at all locations during the year 2018.

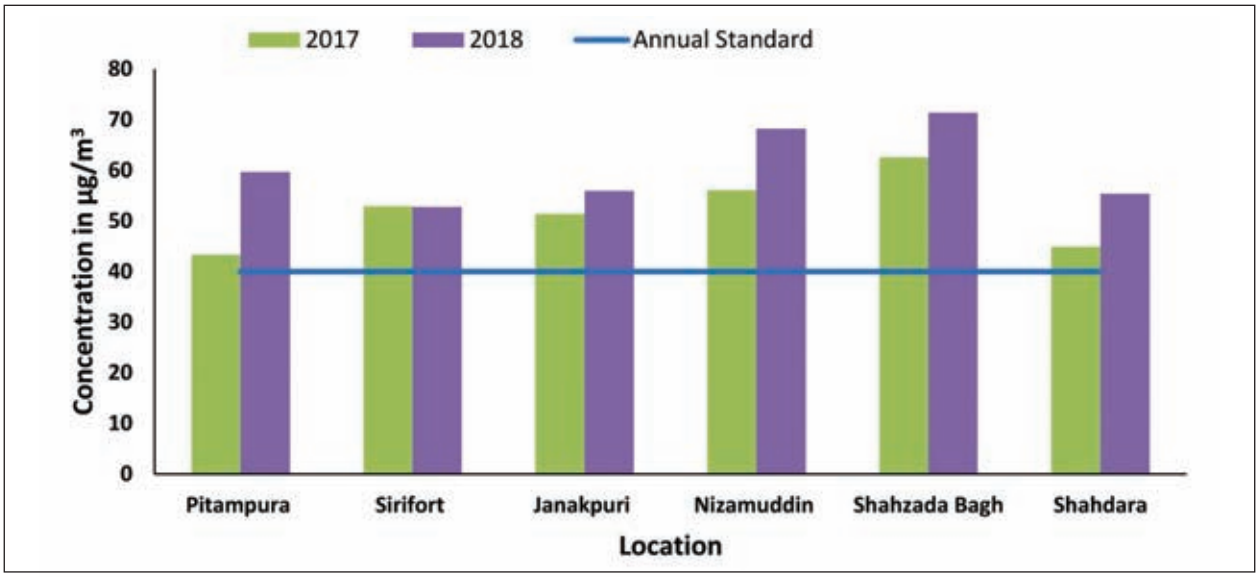



**Figure 6.2 Nitrogen dioxide concentration in Delhi (2017 - 2018)**

- **Particulate Matter ($PM_{10}$)**

The concentration of $PM_{10}$ monitored at all locations shows a decreasing trend except Pitampura in the year 2018 compared to previous year (Figure 6.3). The concentration of $PM_{10}$ at all locations exceeded the annual national standard and ranged between 225 µg/$m^3$ (Shahzada Bagh) to 252 µg/$m^3$ (Shahdara) during the year 2018.

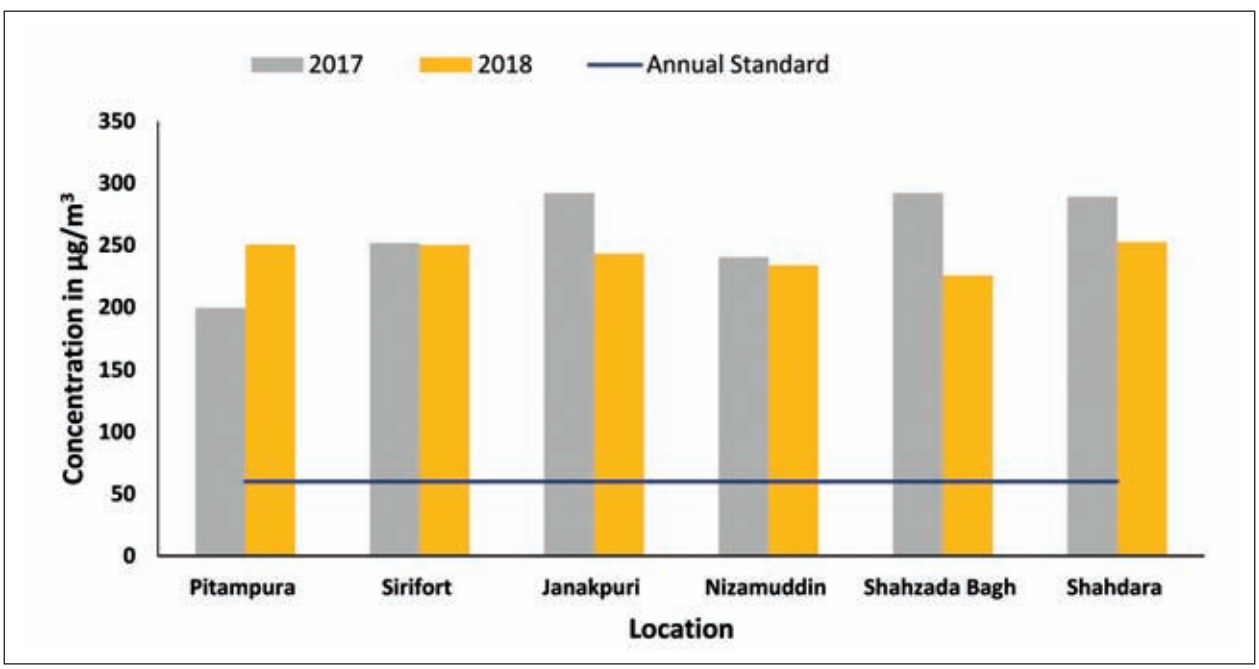



**Figure 6.3 $PM_{10}$ concentration in Delhi (2017 - 2018)**

- **Particulate Matter ($PM_{2.5}$)**

The annual mean concentration of $PM_{2.5}$ shows a decreasing trend at one location and increasing at two locations during the year 2018 in comparison to year 2017 (Figure 6.4) among three locations monitored. The annual mean concentration of $PM_{2.5}$ ranged between 93 µg/m$^3$ (Nizamuddin) and 145 µg/m$^3$ (Pitampura) during the year 2018 and exceeded the prescribed national annual standard at all the locations.

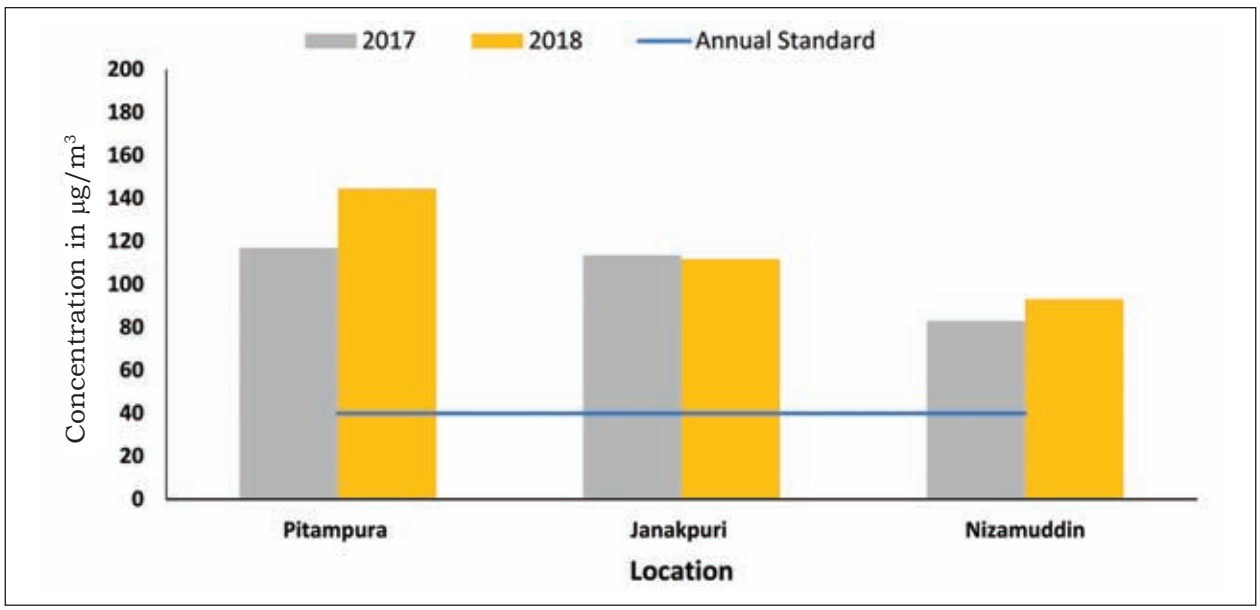



**Figure 6.4 $PM_{2.5}$ concentration in Delhi (2017 - 2018)**

- **Particulate Metals and Metalloid in the Ambient Air of Delhi (2017 & 2018)**

Central Pollution Control Board is monitoring lead, nickel and arsenic in $PM_{10}$ at eight locations (Pitampura, Sirifort, Nizamuddin, Janakpuri, Shahdara, Shahzada bagh, East Arjun Nagar and traffic intersection BSZ Marg ITO) in Delhi.

The concentration of metals (Pb & Ni) and metalloid (As) during 2017 and year 2018 are described as follows:

- **Lead in Particulate Matter ($PM_{10}$)**

The annual mean concentration of particulate lead (Pb) in the ambient air of Delhi is shown in Figure-6.5.

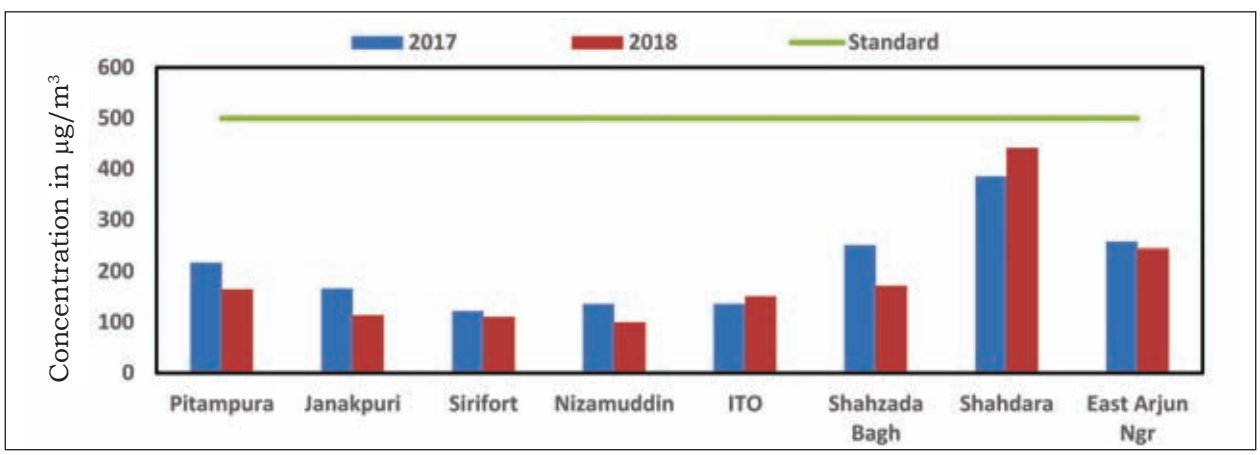



**Figure.6.5: Concentration of Particulate Lead in Ambient Air of Delhi (2017 & 2018)**

The annual mean concentration of particulate lead (Pb) in the year 2017 and 2018 were observed in the range of 122.0 ng/m$^3$ to 386.0 ng/m$^3$ and 100.0 ng/m$^3$ to 442.0 ng/m$^3$ respectively in the ambient air of Delhi. The maximum concentration of particulate lead (Pb) was observed at Shahdara (386.0 ng/m$^3$ & 442.0 ng/m$^3$) in 2017 and 2018 respectively. The minimum concentration of lead found at Sirifort (122.0 ng/m$^3$) in 2017 and Nizamuddin (100.0 ng/m$^3$) in 2018. Lead (Pb) concentration is within the prescribed limit (500 ng/m$^3$) of NAAQS, 2009, across Delhi.

- **Nickel in Particulate Matter ($PM_{10}$):**

The annual mean concentration of particulate ($PM_{10}$) nickel in the ambient air of Delhi is shown in Figure-6.6.

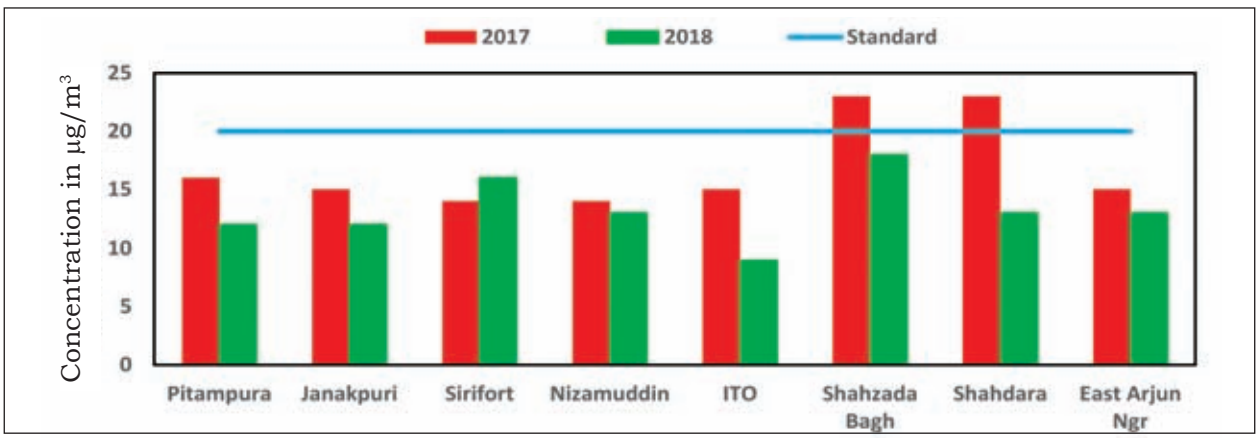



**Figure.6.6: Concentration of Particulate Nickel in Ambient Air of Delhi (2017 & 2018)**

The annual mean concentration of particulate nickel (in $PM_{10}$) was observed in the range of 14.0 ng/m$^3$ to 23.0 ng/m$^3$ (2017) and 9.0 ng/m$^3$ to 18.0 ng/m$^3$ (2018) in Delhi. The observed concentration value of Nickel is exceeded the permissible limits of 20.0 ng/m$^3$ at Shahzada bagh and Shahdara in the year 2017. Decreasing trend of Nickel concentration was observed in the year 2018 as compared to 2017 at all the locations except Sirifort. In 2018 concentration of Nickel was observed within permissible limit (20 ng/m$^3$) across Delhi.

- **Arsenic in Particulate Matter ($PM_{10}$):**

The annual mean concentration of particulate metalloid (arsenic) in the ambient air of Delhi is shown in Figure-6.7.

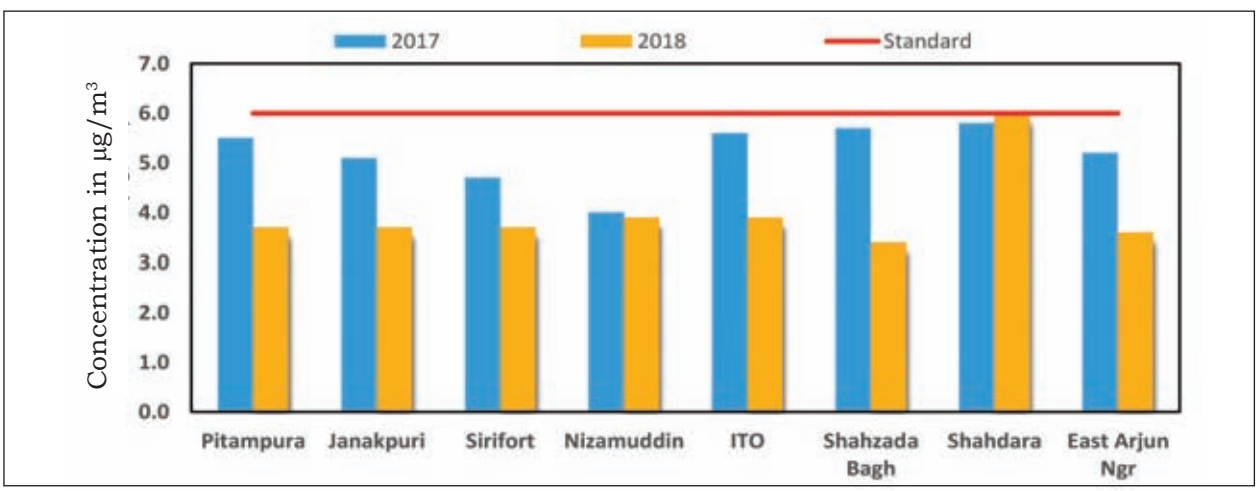



**Figure 6.7: Concentration of Particulate Arsenic in Ambient Air of Delhi (2017 & 2018)**

The Concentrations of Arsenic was observed in decreasing trend at all the locations in 2018 as compared to 2017 except Shahdara. The Annual mean values ranges from 4.0 ng/$m^3$ to 5.8 ng/$m^3$. (2017) and 3.4 ng / $m^3$ to 6.0 ng/$m^3$. (2018).

- **Air Quality at ITO (Traffic Intersection), Delhi**

The air quality at ITO Traffic intersection is being monitored during the last many years. The air quality during the last two years (2017 – 2018) in traffic area is presented in Figure 6.8. The concentration of $NO_2$ and $PM_{10}$ in year 2018 is showing an increasing trend with respect to 2017.

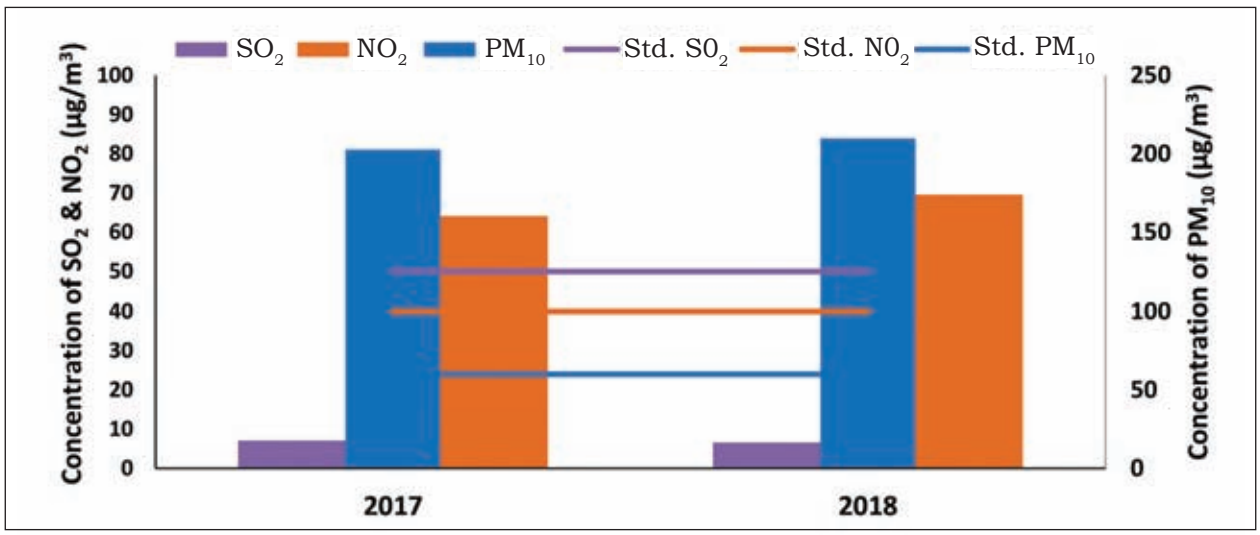



**Figure 6.8 Pollutants Concentration at ITO Intersection, Delhi (2017 - 2018)**

- **Trend of Particulate Matter ($PM_{10}$ & $PM_{2.5}$) in Delhi**

Average monthly trend of Particulate Matter ($PM_{10}$ & $PM_{2.5}$) in Delhi (April, 2018 to March, 2019) is shown in the Figure 6.9. Increasing trend of concentration of Particulate Matter was observed from the Month of October, and maximum concentration was observed in the month of Dec,2018 ($PM_{10}$=389 µg/$m^3$ & $PM_{2.5}$=231 µg/$m^3$). Average monthly concentration of Particulate Matter (i.e $PM_{10}$ & $PM_{2.5}$) in Delhi was observed lowest as compared to other months during July, 2018 to September 2018.

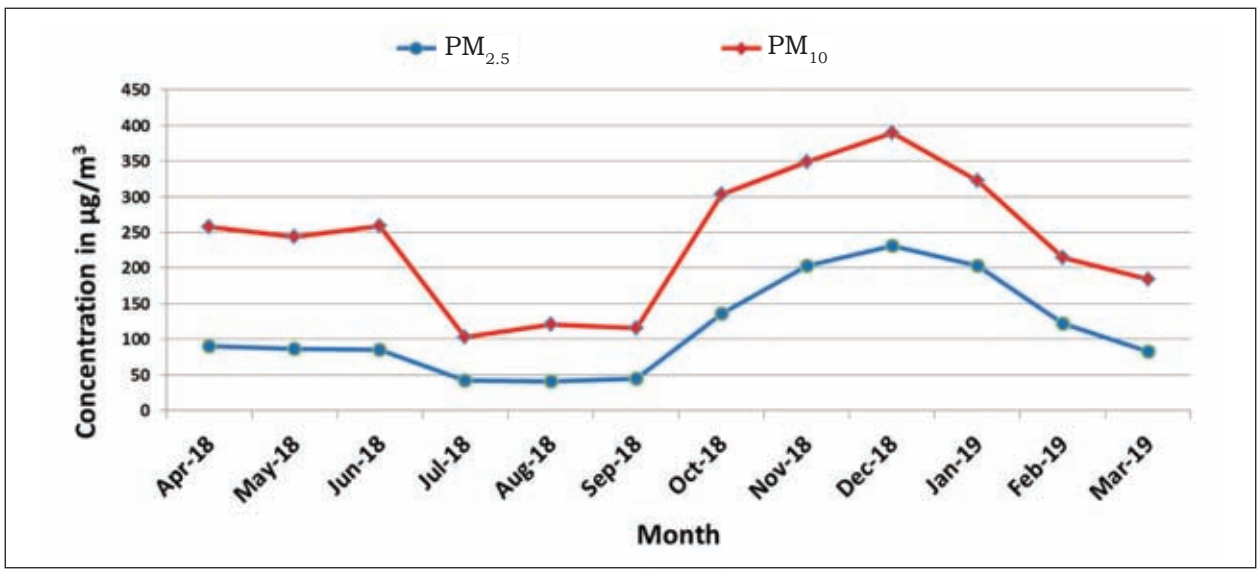


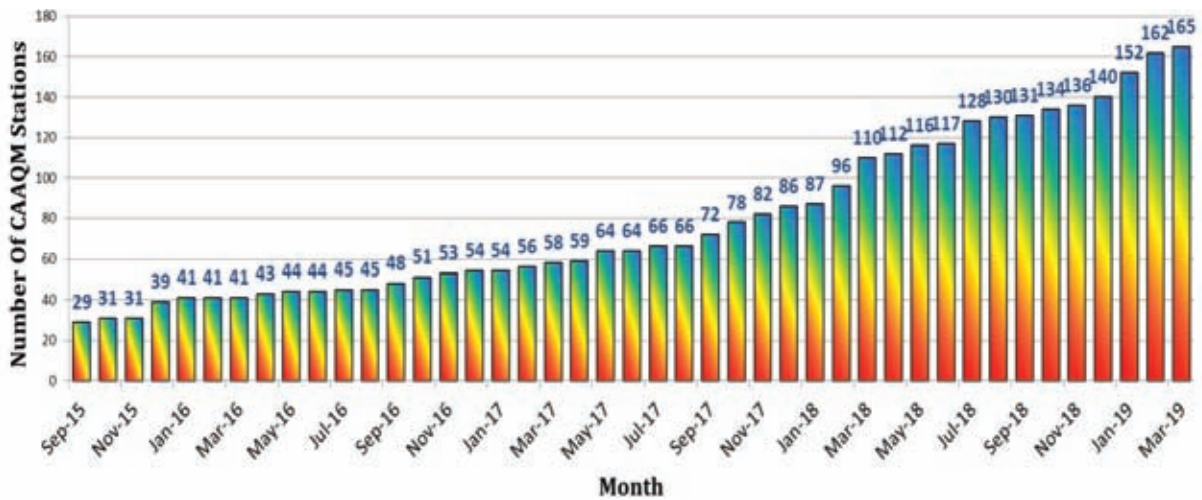

**Figure 6.9 Average Monthly trend of Particulate Matter in Delhi (April 2018 to March 2019)**

## 6.2 NATIONAL AIR QUALITY INDEX

Air pollution has been a matter of environmental and health concerns, particularly in urban areas. Central Pollution Control Board along with State Pollution Control Boards has been operating National Air Monitoring Program (NAMP) covering 312 cities of the country. In addition, continuous monitoring systems that provide data on real-time basis are also installed in few cities.

Air Quality Index (AQI) is one such tool for effective dissemination of air quality information to people as a part of this, Union Environment Ministry proposed to extend the measurement of air quality on real time basis in 22 state capitals and 44 other cities with a population of more than one million. This index will help the people know about the level of pollution in the ambient air on daily basis. The AQI Display has been increased from the initial 10 cities to currently 101 cities in 18 states of India. At present, total 165 Continuous Ambient Air Quality Monitoring Stations all over the country are connected with NAQI. The growing trend of stations across India is as shown:

**Growing trend of installation of CAAQM stations across India, Connected to NAQI**




The proposed AQI will consider eight pollutants ($PM_{10}$, $PM_{2.5}$, $NO_2$, $SO_2$, CO, $O_3$, $NH_3$, and Pb) in which one of $PM_{10}$ or $PM_{2.5}$ parameter is mandatory. There are six AQI categories, namely Good, Satisfactory, Moderately polluted, Poor, Very Poor, and Severe. The AQI values and corresponding ambient concentrations (health breakpoints) as well as associated likely health impacts for the identified eight pollutants are as follows:

| AQI Category, Pollutants and Health Breakpoints | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **AQI Category (Range)** | **$PM_{10}$ 24-hr** | **$PM_{2.5}$ 24-hr** | **$NO_2$ 24-hr** | **$O_3$ 8-hr** | **CO 8-hr (mg/m³)** | **$SO_2$ 24-hr** | **$NH_3$ 24-hr** | **Pb 24-hr** |
| Good (0-50) | 0-50 | 0-30 | 0-40 | 0-50 | 0-1.0 | 0-40 | 0-200 | 0-0.5 |
| Satisfactory (51-100) | 51-100 | 31-60 | 41-80 | 51-100 | 1.1-2.0 | 41-80 | 201-400 | 0.5 –1.0 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Moderately polluted (101-200) | 101-250 | 61-90 | 81-180 | 101-168 | 2.1- 10 | 81-380 | 401-800 | 1.1-2.0 |
| Poor (201-300) | 251-350 | 91-120 | 181-280 | 169-208 | 10-17 | 381-800 | 801-1200 | 2.1-3.0 |
| Very poor (301-400) | 351-430 | 121-250 | 281-400 | 209-748* | 17-34 | 801-1600 | 1200-1800 | 3.1-3.5 |
| Severe (401-500) | 430 + | 250+ | 400+ | 748+* | 34+ | 1600+ | 1800+ | 3.5+ |

**One hourly monitoring (for mathematical calculations only)*

| AQI | Associated Health Impacts |
|---|---|
| Good (0–50) | Minimal Impact |
| Satisfactory (51–100) | May cause minor breathing discomfort to sensitive people. |
| Moderately polluted (101–200) | May cause breathing discomfort to people with lung disease such as asthma, and discomfort to people with heart disease, children and older adults. |
| Poor (201–300) | May cause breathing discomfort to people on prolonged exposure, and discomfort to people with heart disease |
| Very Poor (301–400) | May cause respiratory illness to the people on prolonged exposure. Effect may be more pronounced in people with lung and heart diseases. |
| Severe (401-500) | May cause respiratory effects even on healthy people and serious health impacts on people with lung/heart diseases. The health impacts may be experienced even during light physical activity |

## 6.3 Status of National Air Quality Index (NAQI) in Delhi (2016-2018)

The status of National Air Quality Index (NAQI) for the years 2016 to 2018 is shown in Figure 6.10. Both poor and very poor category was decreased to 73 and 113 from 89 and 115 days in respective categories in year 2018 as compared to year 2017. Severe Category days were 20 in 2018 which is higher than previous year i.e. 2017 but compared to 2016 numbers of severe days is decreased. Moderate days increased to 106 in 2018 from 105 and 83, as recorded in 2017 & 2016 respectively. Higher numbers of satisfactory days in 2018 were also observed as compared to previous two years, all these may be attributed to the extensive measures undertaken under GRAP and other regular intervention in pollution mitigation in Delhi.

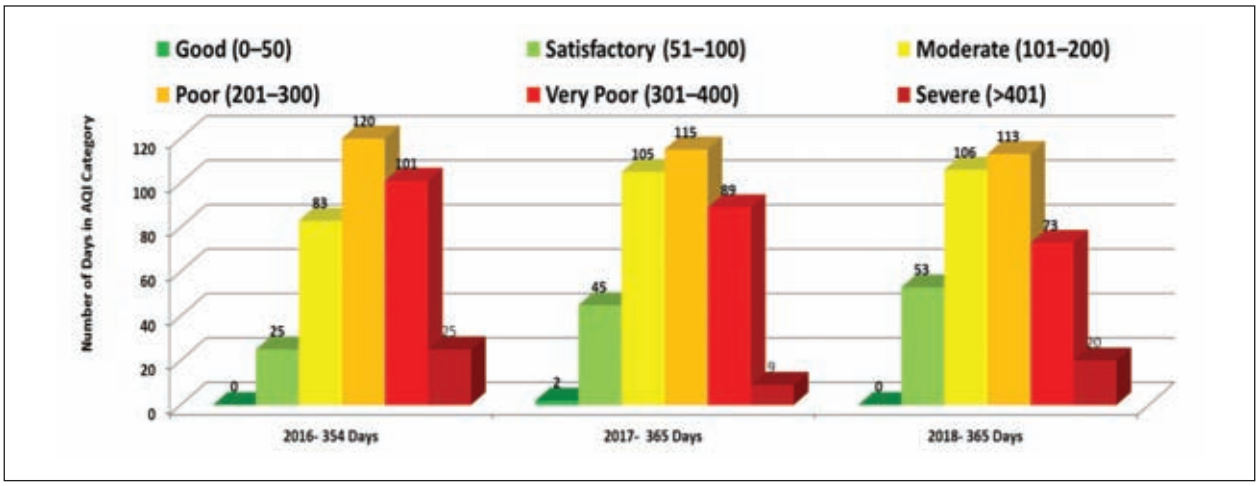



**Figure 6.10 Comparative AQI Delhi 2016-2018**

## 6.4 SODAR system and Automatic Weather Station

A monostatic SODAR system and an automatic weather station are in continuous operation at Parivesh Bhawan. The data obtained from the SODAR system is analysed to get mixing height. Mean mixing height in different months and in periods of high/low convective activity is given in the table 6.1.

**Table 6.1: Mixing height in Delhi**

| Month | Monthly Mean (m) | | | Mean mixing height in period of high convective activity (m) | | | Mean mixing height in period of low convective activity (m) | | |
|---|---|---|---|---|---|---|---|---|---|
| | 2016-17 | 2017-18 | 2018-19 | 2016-17 | 2017-18 | 2018-19 | 2016-17 | 2017-18 | 2018-19 |
| April | 667 | 679 | 717 | 1339 | 1290 | 1340 | 301 | 371 | 331 |
| May | 829 | 567 | 713 | 1483 | 1169 | 1353 | 411 | 231 | 278 |
| June | 923 | 526 | 708 | 1677 | 1039 | 1324 | 495 | 165 | 280 |
| July | 727 | 559 | 707 | 1547 | 994 | 1249 | 401 | 167 | 300 |
| August | 696 | 514 | 708 | 1487 | 1038 | 1220 | 419 | 147 | 334 |
| September | 774 | 611 | 565 | 1508 | 1070 | 1120 | 380 | 234 | 254 |
| October | 647 | 583 | 601 | 1507 | 1299 | 1244 | 332 | 328 | 286 |
| November | 504 | 480 | 528 | 1288 | 1099 | 1206 | 281 | 265 | 295 |
| December | 478 | 512 | 438 | 1324 | 1237 | 1093 | 303 | 241 | 235 |
| January | 556 | 586 | 411 | 1397 | 1557 | 950 | 264 | 325 | 253 |
| February | 579 | 677 | 385 | 1304 | 1451 | 964 | 294 | 364 | 163 |
| March | 654 | 792 | 470 | 1322 | 1535 | 997 | 370 | 361 | 194 |

In 2016-17 the monthly mean mixing height was minimum in December ie. 478 meters and mean mixing height in the period low convective activity was minimum in January ie. 264 meters.

In 2017-18 the monthly mean mixing height was minimum in November ie. 480 meters. and mean mixing height in the period of low convective activity was minimum in August

i.e. 147 meters. In 2018-19 the monthly mean mixing height was minimum in February ie. 385 metres and mean mixing height in the period of low convective activity was minimum in February i.e. 163 meters.

In 2016-17 duration of high convective activity was minimum in November and December. In 2017-18 duration of high convective activity was minimum in November, December and January. In 2018-19 duration of high convective activity was minimum in December and January.

Diurnal variation of mixing height for the month of February 2019 which was minimum in 2018-19 is shown in Figure 6.11.

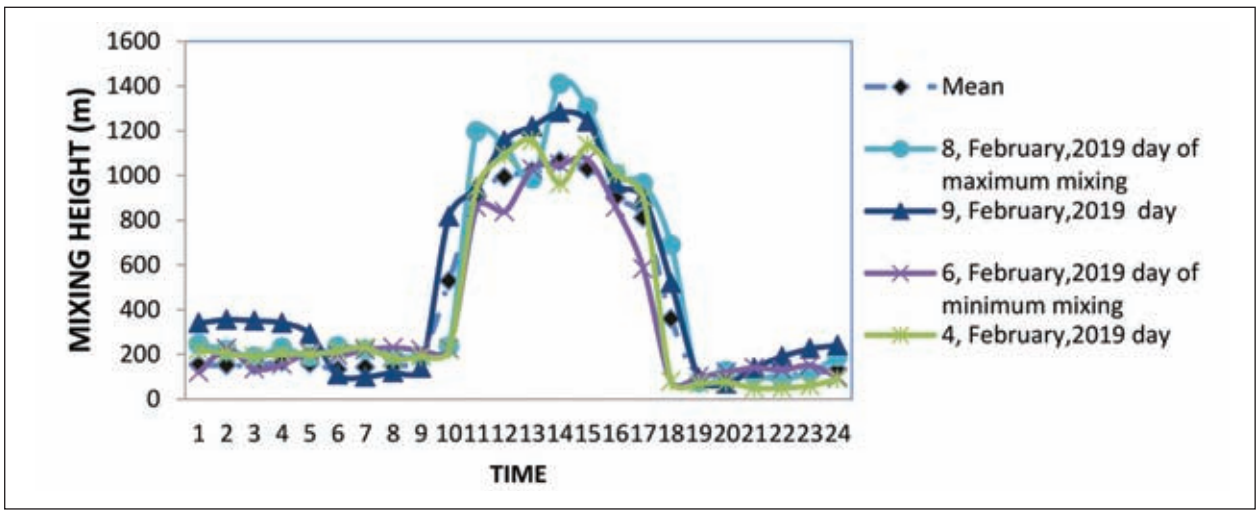



**Figure 6.11 DIURNAL VARIATION OF MIXING HEIGHT - FEBRUARY 2019**

## 6.5. Ambient Air Quality Monitoring (AAQM) at Agra-TTZ-2018-19

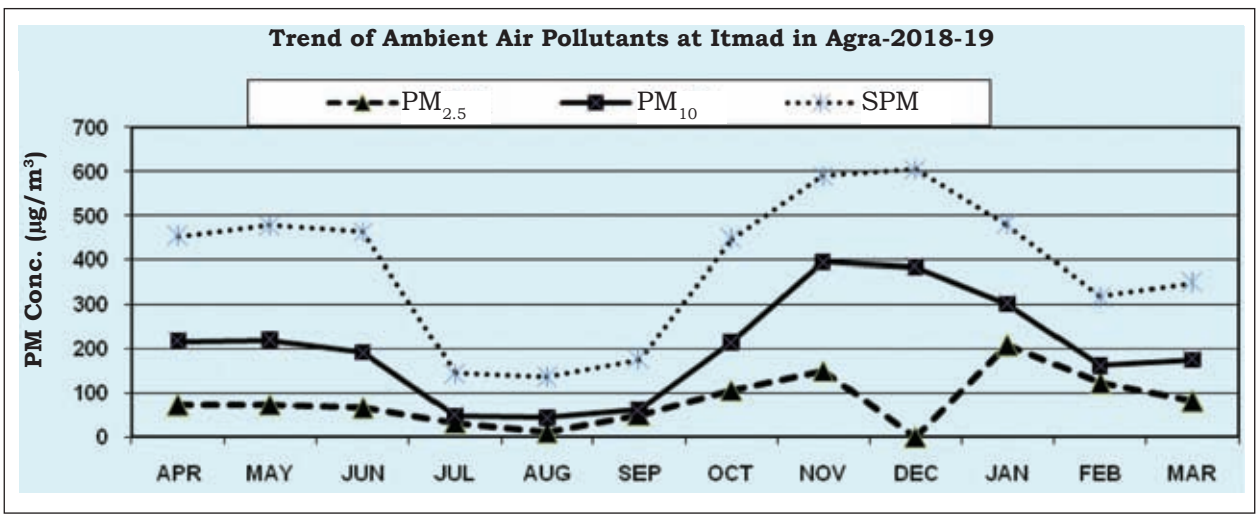
Ambient air quality is being monitored by CPCB in Agra at four locations viz. Tajmahal, Etmad- ud-daulah, Rambagh (all protected monuments) and Nunhai (Industrial Area) since 2002. The summary of the AAQM during 2018-19 in Agra is presented at table-6.2.

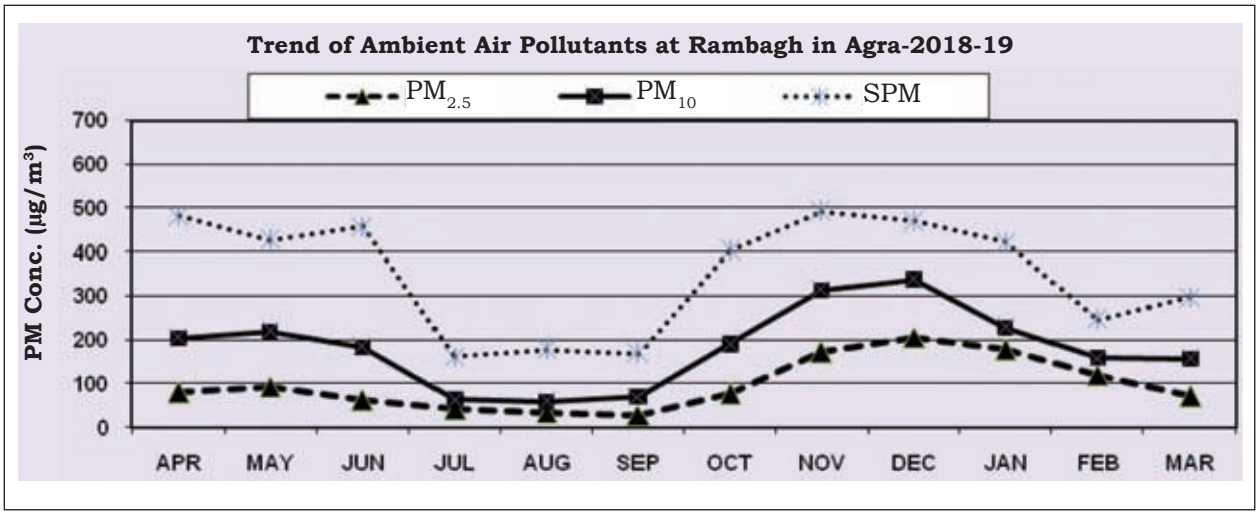
**Table 6.2: AAQM Data-2018-19 (all values are in µg/m$^3$ except SD,EF)**

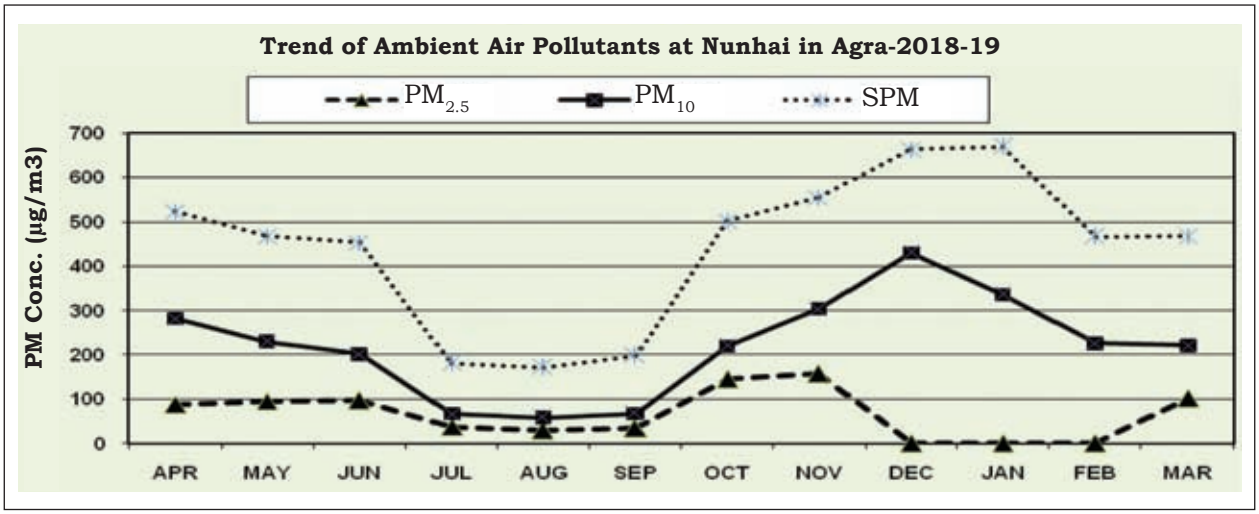
| | | $SO_2$ | $NO_2$ | $PM_{2.5}$ | $PM_{10}$ | SPM |
|---|---|---|---|---|---|---|
| **Tajmahal** | Avg | 5 | 18 | 97 | 169 | 291 |
| | max | 8 | 27 | 247 | 330 | 414 |
| | min | 4 | 12 | 27 | 40 | 103 |
| | EF | 0 | 1 | 2 | 3 | 4 |
| | SD | 1 | 6 | 73 | 89 | 116 |
| **Etmad** | Avg | 5 | 23 | 89 | 201 | 386 |
| | max | 6 | 35 | 208 | 395 | 604 |
| | min | 4 | 13 | 10 | 44 | 135 |
| | EF | 0 | 1 | 2 | 3 | 6 |
| | SD | 1 | 8 | 56 | 117 | 163 |

| | | $SO_2$ | $NO_2$ | $PM_{2.5}$ | $PM_{10}$ | SPM |
|---|---|---|---|---|---|---|
| **Rambagh** | Avg | 5 | 24 | 97 | 182 | 350 |
| | max | 7 | 35 | 206 | 338 | 492 |
| | min | 4 | 14 | 28 | 59 | 161 |
| | EF | 0 | 1 | 2 | 3 | 5 |
| | SD | 1 | 7 | 59 | 90 | 131 |
| **Nunhai** | Avg | 5 | 25 | 88 | 220 | 443 |
| | max | 7 | 35 | 158 | 430 | 670 |
| | min | 4 | 16 | 29 | 59 | 172 |
| | EF | 0 | 1 | 2 | 4 | 6 |
| | SD | 1 | 7 | 47 | 113 | 172 |
| | Annual Std. | 20 | 30 | 40 | 60 | 70 (as per 1991) |

The AAQM data indicated that $PM_{2.5}$ has been found 2.2 – 2.4 times above the annual standard i.e.40µg/$m^3$ in Agra; while $PM_{10}$ has been found 2.82 – 3.66 times above the annual standard i.e.60µg/$m^3$ at all stations. $SO_2$ is well within the annual standard limit i.e.20µg/$m^3$. The level of $NO_2$ has been found below than the annual standard i.e. 30µg/$m^3$, at all AAQM stations.





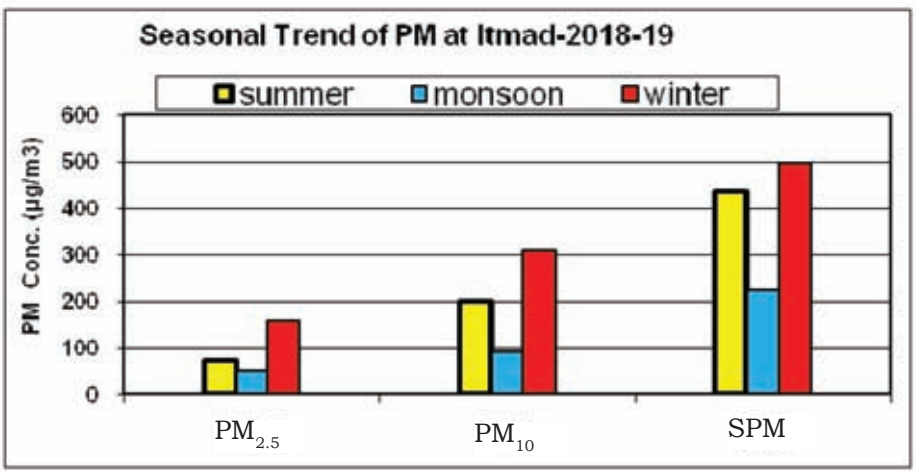

### 6.5.1 Seasonal Air Quality data Analysis of Agra: TTZ

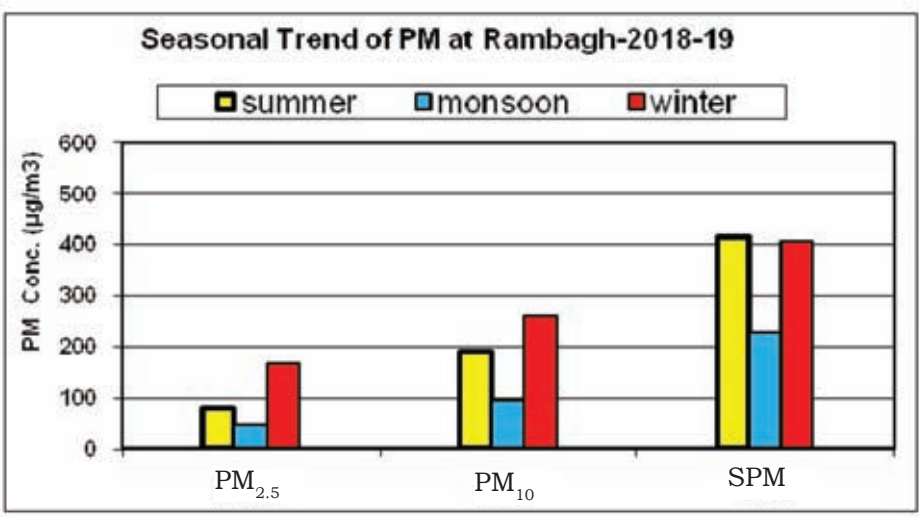
The annaul air quality data of four stations have been categorised in seasonal. in Agra months can be clearly categorised as summer (March- June), monsoon (July – September) and winter (October- February) season. the data analysis clearly indicated that $SO_2$ is almost below detection limit during all season. $NO_2$ has been found higher during winter months and least during monsoon followed by summer at all stations. $PM_{2.5}$ ranges 158µg/$m^3$ – winter, 58µg/$m^3$ – 96µg/$m^3$ during summer and 45µg/$m^3$ – 62µg/$m^3$ during 185µg/m3 during monsoon in al stations. Data shows higher values during winter as compared to other seasons.

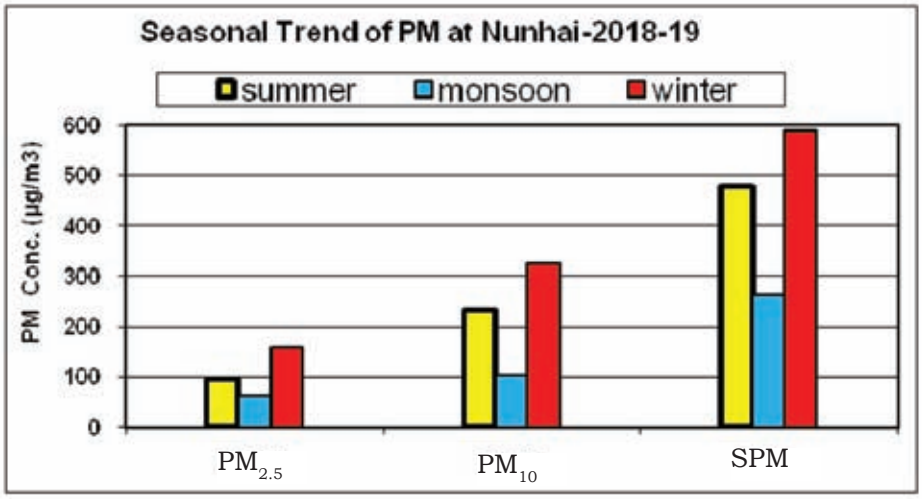
The concentration of $PM_{10}$ ranges between 255µg/$m^3$ – 324µg/$m^3$ during winter, 167µg/$m^3$ – 234µg/$m^3$ during summer and 86µg/$m^3$ – 104µg/$m^3$ during monsoon. SPM concentration ranges also found higher during winter compared to summer or monsoon except at Rambagh, where SPM value during summer was found higher (416 µg/$m^3$) than winter (407 µg/$m^3$), this may be due to dry loose top soil of Rambagh garden and dry Yamuna river bed. During winter seasons, there is inverse atmospheric conditions and low mixing height, so pollutants do not disperse easily.

## AAQM Seasonal average data

| station | seasons | $SO_2$ | $NO_2$ | $PM_{2.5}$ | $PM_{10}$ | SPM |
|---|---|---|---|---|---|---|
| Tajmahal | summer | 5 | 18 | 58 | 167 | 342 |
| | monsoon | 6 | 13 | 48 | 86 | 165 |
| | winter | 5 | 24 | 185 | 255 | 365 |
| Itmad | summer | 5 | 22 | 74 | 201 | 436 |
| | monsoon | 5 | 18 | 50 | 92 | 226 |
| | winter | 5 | 29 | 160 | 311 | 498 |
| Rambagh | summer | 5 | 19 | 78 | 191 | 416 |
| | monsoon | 6 | 22 | 45 | 96 | 228 |
| | winter | 5 | 30 | 169 | 260 | 407 |
| Nunhai | summer | 4 | 25 | 96 | 234 | 478 |
| | monsoon | 6 | 20 | 62 | 104 | 264 |
| | winter | 5 | 30 | 158 | 324 | 589 |
| | Note: All vaues are in $\mu g/m^3$ | | | | | |



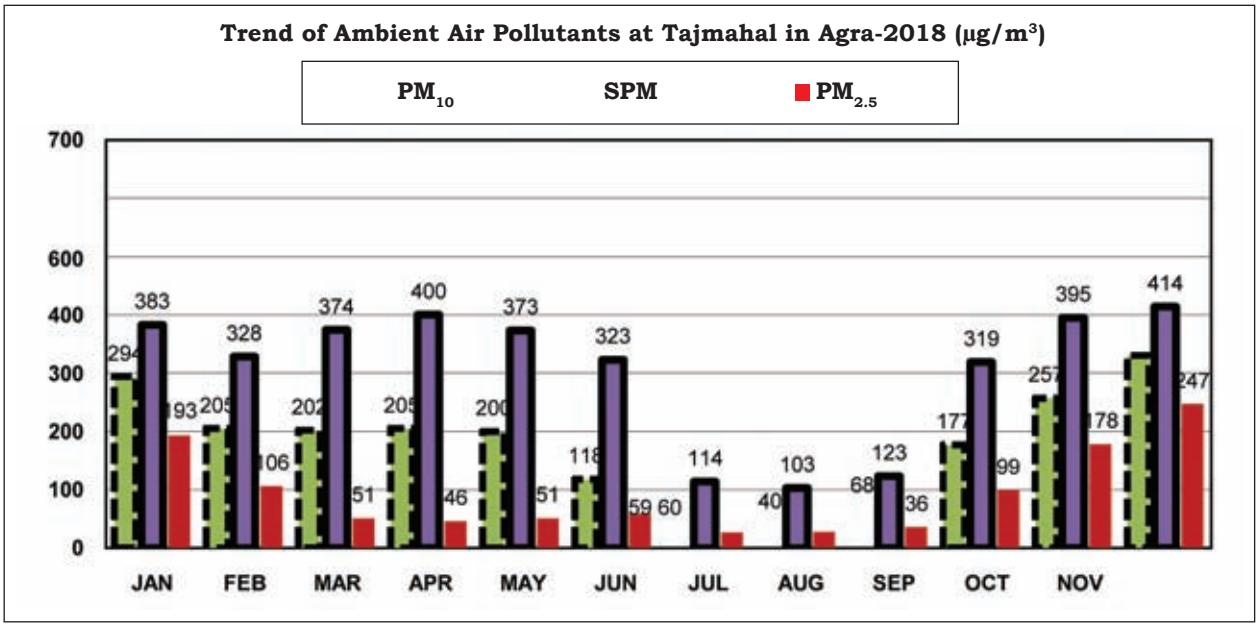


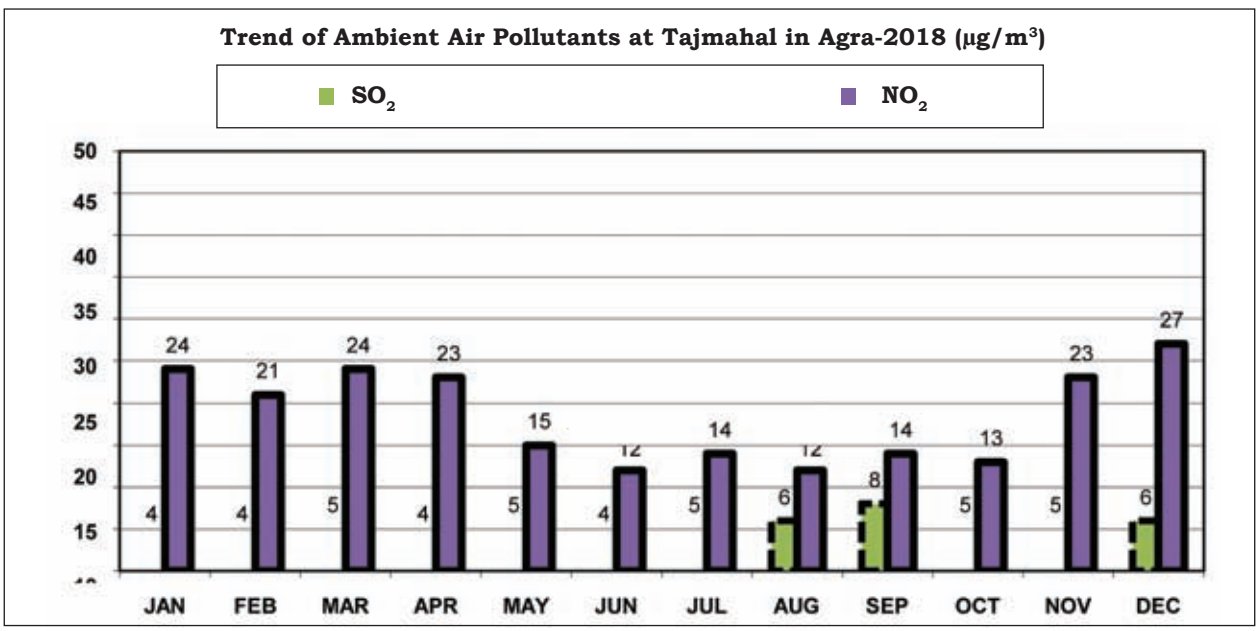

### 6.5.2 Ambient Air Quality Monitoring (AAQM) Data analysis 2018

Ambient air quality is being monitored by CPCB in Agra at four location viz. Tajmahal, Etmad-ud-daulah, Rambagh (all protected monuments) and Nunhai (Industrial Area) since 2002. The summary of the AAQM during 2018 in Agra is given below:

**AAQM Data-2018 (all values are in µg/m³ except SD, EF)**

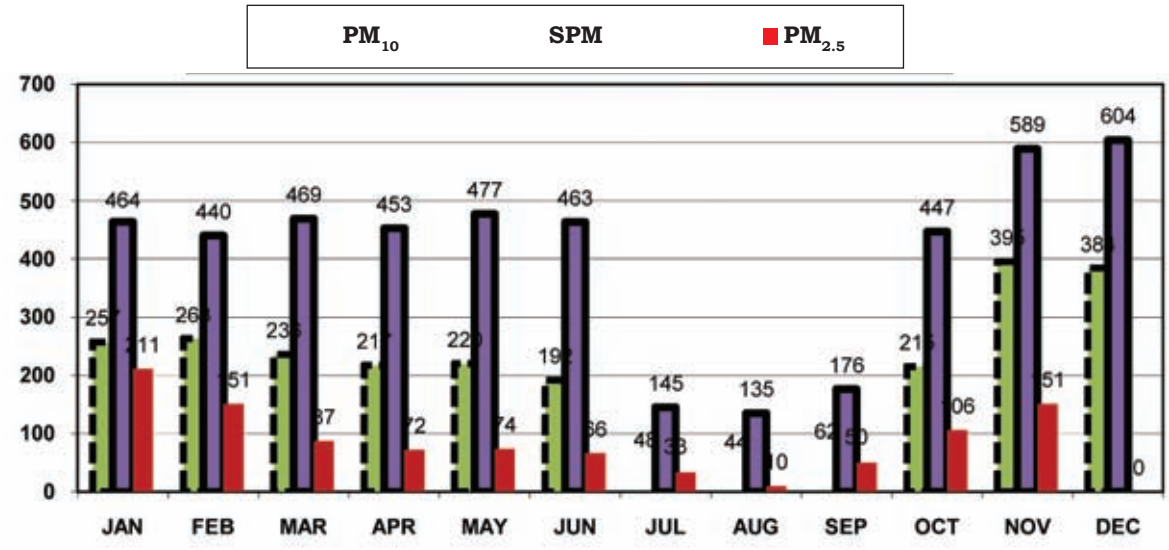
| | | $SO_2$ | $NO_2$ | $PM_{2.5}$ | $PM_{10}$ | SPM |
|---|---|---|---|---|---|---|
| Tajmahal | Avg | 5 | 19 | 93 | 180 | 304 |
| | max | 8 | 27 | 247 | 330 | 414 |
| | min | 4 | 12 | 27 | 40 | 103 |
| | EF | 0.3 | 0.6 | 1.3 | 3.0 | 4.3 |
| | SD | 1 | 6 | 92 | 119 | 74 |
| Etmad | Avg | 5 | 23 | 92 | 211 | 405 |
| | max | 6 | 35 | 211 | 395 | 604 |
| | min | 4 | 13 | 10 | 44 | 135 |
| | EF | 0.2 | 0.8 | 1.3 | 3.5 | 5.8 |
| | SD | 1 | 8 | 115 | 162 | 59 |
| Rambagh | Avg | 5 | 23 | 104 | 194 | 367 |
| | max | 7 | 35 | 224 | 338 | 492 |
| | min | 4 | 14 | 28 | 59 | 161 |
| | EF | 0.3 | 0.8 | 1.5 | 3.2 | 5.2 |
| | SD | 1 | 7 | 93 | 125 | 66 |
| Nunhai | Avg | 5 | 25 | 113 | 234 | 450 |
| | max | 7 | 36 | 295 | 430 | 663 |
| | min | 4 | 16 | 29 | 59 | 172 |
| | EF | 0.3 | 0.8 | 1.6 | 3.9 | 6.4 |
| | SD | 1 | 7 | 122 | 170 | 77 |
| | Annual Std. | 20 | 30 | 40 | 60 | 70 (as per1991) |



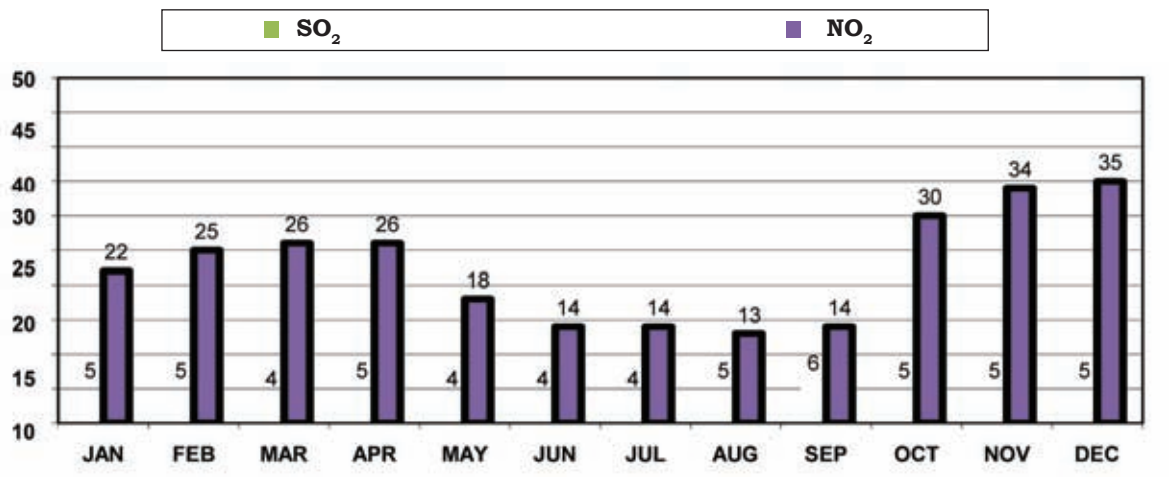




The AAQM data indicated that $PM_{2.5}$ has been found 2.3 – 2.8 times above the annual standard i.e.40µg/m³ in Agra; while $PM_{10}$ has been found 3.0 – 3.9 times above the annual standard i.e.60µg/m³ at all stations. $SO_2$ is well within the annual standard limit i.e. 20µg/m³. The level of $NO_2$ has been found below than the annual standard i.e.30µg/m³, at all AAQM stations.

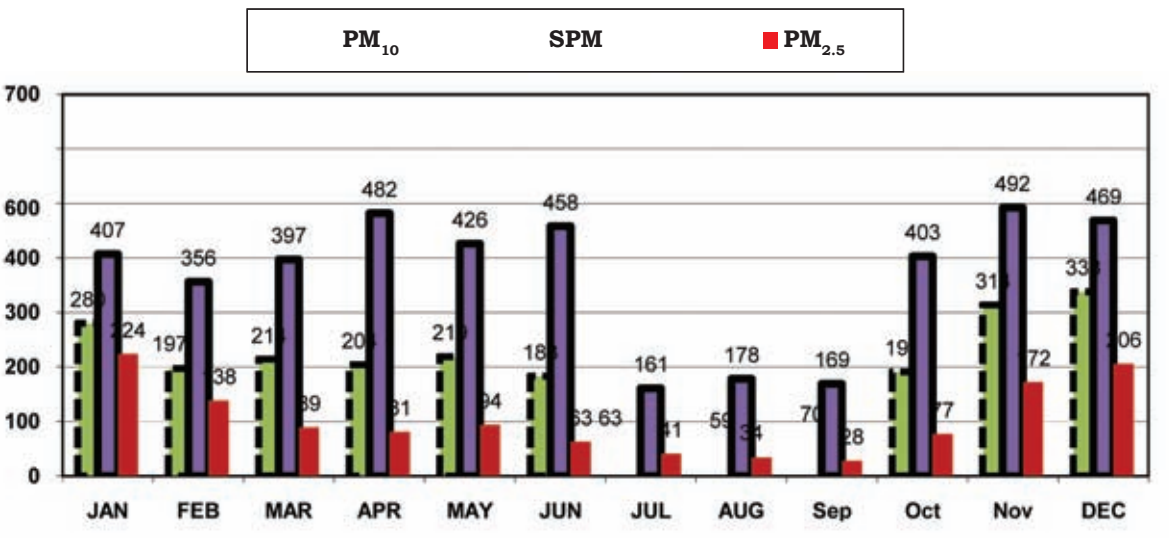
**Trend of Ambient Air Pollutants at Itmad in Agra-2018 (µg/m³)**



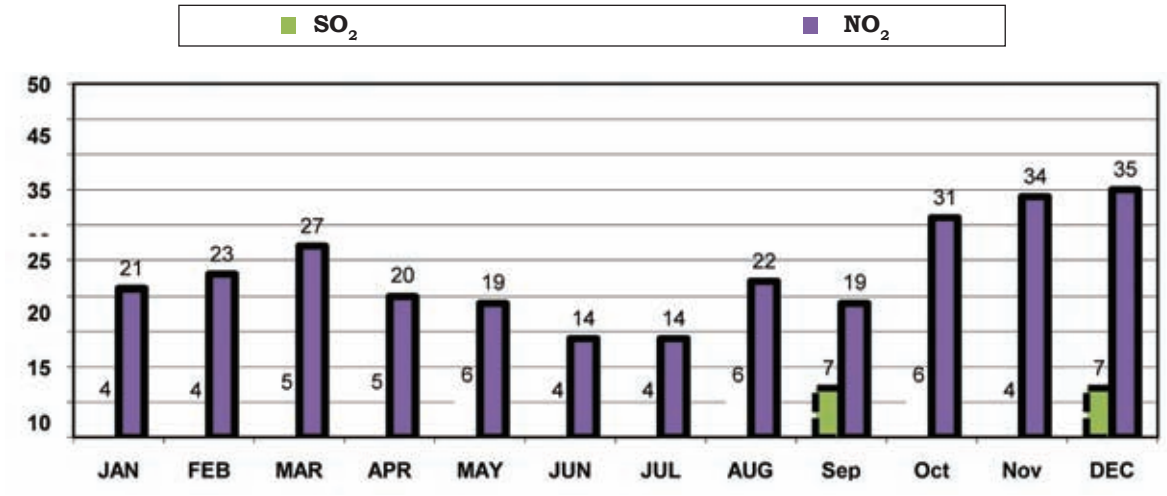

**Trend of Ambient Air Pollutants at Itmad in Agra-2018 (µg/m³)**



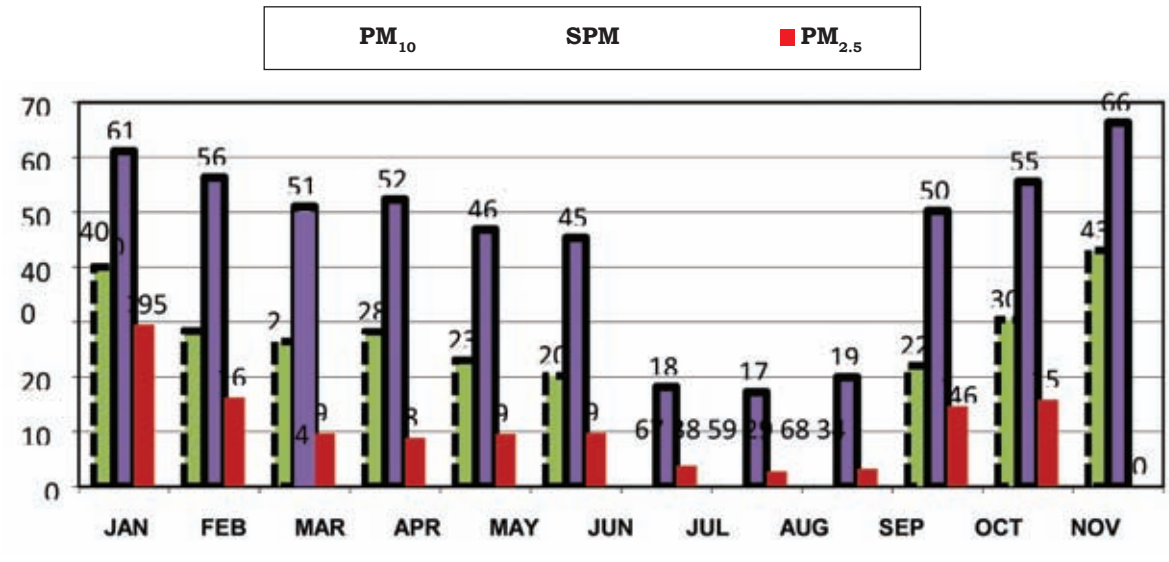

**Trend of Ambient Air Pollutants at Rambagh in Agra-2018 (µg/m³)**



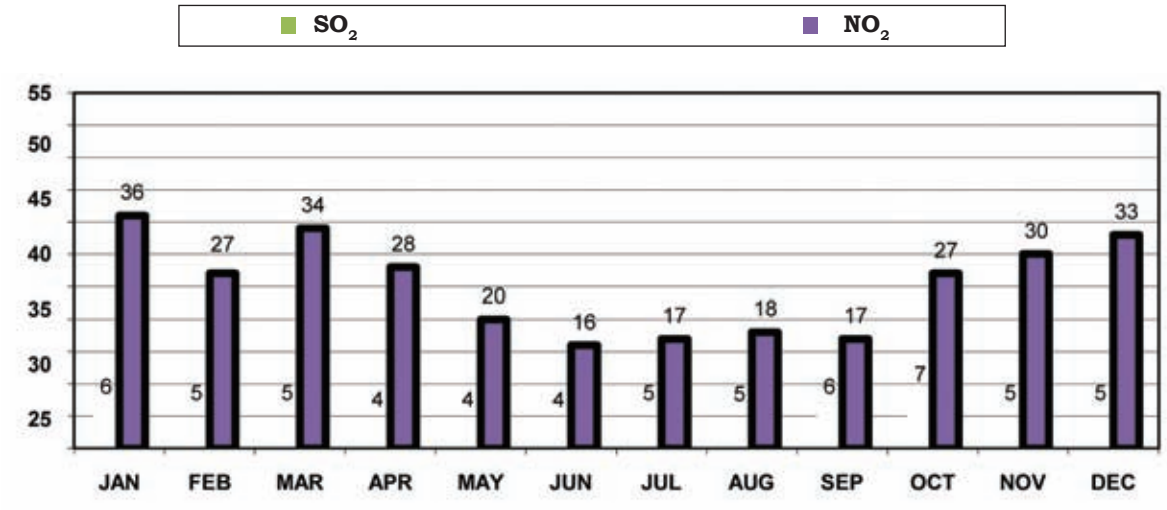
**Trend of Ambient Air Pollutants at Rambagh in Agra-2018 (µg/m³)**




**Trend of Ambient Air Pollutants at Nunhai in Agra-2018 (µg/m³)**



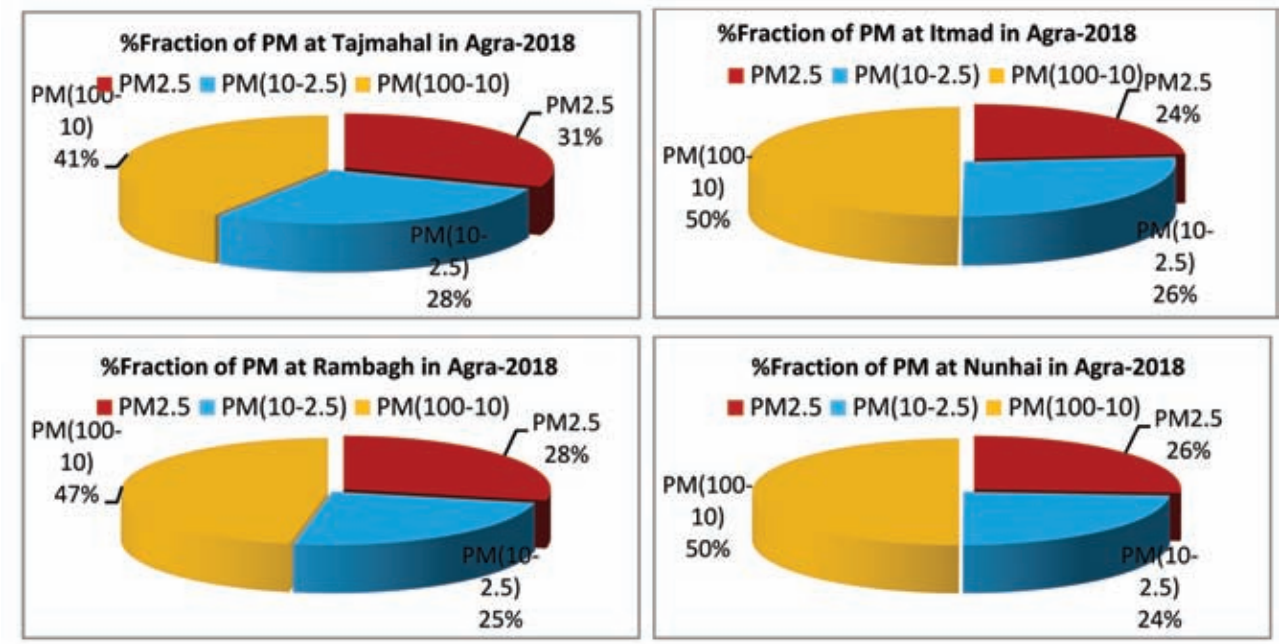

**Trend of Ambient Air Pollutants at Nunhai in Agra-2018 (µg/m³)**



## 3 Particulate Matter Profile in Agra:TTZ

The monitoring of $PM_{2.5}$ was also carried out at all four stations during the year (2018) along with $PM_{10}$ & $PM_{100}$. The $PM_{2.5}$ values found between 92µg/m$^3$ – 111µg/m$^3$; which is exceed the annual standard of $PM_{2.5}$ i.e. 40µg/m$^3$ at all locations in Agra.

The %fraction of $PM_{2.5}$ in SPM ranges between 24% (Itmad) - 31% (Tajmahal); while at Rambagh 28% & at Nunhai it is found 26%. The fraction of $PM_{2.5}$ in $PM_{10}$ ranges 24% – 28% in Agra. The percentage fraction of $PM_{2.5}$ is higher at Tajmahal than any other stations in Agra, which may be due to vehicles (mainly tourist's vehicles) movement & parking near Tajmahal east & west gate parking. The data of $PM_{2.5}$ as well as fractional distribution of particulate matter in Agra is presented below:




## 6.6 Water Quality Monitoring at Prayagraj Kumbh 2019

This year Kumbh Mela-2019 is held as Kumbh. Uttar Pradesh (UP) Government has been made special arrangements to ensure cleanliness in and around the Mela area of about 3200 acres. To provide clean surroundings of mela, total area of Kumbh Mela have been divided into 20 (twenty) sectors. Prayagraj hosted approx.. 12.5 crore people this year. According to media reports, around 20 lakh people are residing at the site. It was very challenging for the Government organizations to keep the Mela area clean and swachha, especially on mass bathing dates. CPCB, Regional Directorate (North) Lucknow carried out monitoring during Kumbh mela 2019 to assess the water quality of river Ganga and its tributaries i.e. Kali, Ramganga and Yamuna at various locations starting from Farrukhabad to downstream of Prayagraj including Sangam at Prayagraj. Considering the sensitivity and importance of the occasion all possible precautionary measures for maintaining the water quality of river Ganga during the Kumbh mela were taken. The following actions taken by government has been summarized as under. :

**1. Directions under section 18(1) (b) of the Water (Prevention and Control of Pollution) Act, 1974 has been issued to UPPCB and UEPPCB to maintain the river water quality. The condition levied in the direction are as under:**

- There will be no discharge of effluent in river Ganga & its tributaries from Grossly Polluting Units (Distillery, Sugar, Pulp & Paper, Textile etc.) during the Kumbh Mela.
- UPPCB shall monitor water quality of river Ganga on daily basis and UEPPCB shall monitor the river water quality of river Dhela, Kosi, Bhela, Kitcha on daily basis and upload the data on the web.
- UPPCB shall ensure the monitoring of discharge from drains twice in a week/weekly basis and UEPPCB shall ensure the monitoring of drains on weekly basis and upload the data on the web.
- UPPCB and UEPPCB shall ensure the monitoring of discharge from STPs on weekly basis and upload the data on the web.
- UPPCB shall ensure the monitoring of CETPs at Jajmau, Rooma, Banthar and Unnao on weekly basis and upload the data on the web.
- UPPCB and UEPPCB shall inspect Grossly Polluting Industries on weekly basis for compliance check.
- UPPCB and UEPPCB shall enforce regulatory measures for control of pollution so that bathing water quality is maintained during Kumbh Mela.

**2. CPCB scheduled extensive monitoring of water quality of river Ganga and its tributaries (Ram Ganga, Kali East and Yamuna), drains, STPs (January 08, 2019 to March 14, 2019.)**

- Pre & Post Kumbh: Monitoring of 07 STPs & 18 Drains at Prayagraj
- Monitoring of R. Ganga, Kali and Ramganga at Farrukhabad, Kannauj and Kanpur 03 days before each auspicious bathing day
- Monitoring of R. Ganga and Yamuna at Prayagraj during Pre Snan day, on Snan day and Post Snan day.
- Daily monitoring of R. Ganga at Sangam (twice a day) from 14.01.19 to 05.03.19
- Daily monitoring of R. Ganga at Kanpur downstream (at Dyodhighat) from 17.01.19 to 04.03.19

## 6.7 Performance Evaluation of Sewage Treatment Plants In Delhi

Although many of the Sewage treatment options are available to treat the generated sewage. There is a big gap between sewage generation (approx.. 4,000mld) and available treatment capacity (2500 mld) lead to overload of STPs. Still, significant volume i.e 40% of sewage water without any treatment is being discharged into surface water bodies leading to deterioration of water quality and lethal to aquatic life. However, quantification of sewage generation and its characteristics are being changed from season to season and on shock loads.

A study was carried out to evaluate the performance of STP with the available technologies from 5.11.2018 – 31.03.2019 with following objectives:

- To assess the pollution load at the inlet and outlet of STP through analytical characteristics (BOD, COD, TSS and Coliform bacteria).
- To evaluate the performance efficiency of STP in terms of pollution load reduction of existing STP.
- To evaluate the gap between sewage generation and treatment status.

The total STPs commissioned in Delhi at 17 locations are 40 nos. of which 33 STPs were operational and 1STP was found non-operational. Out of 33 STPs -12 STPs were found non-compliance with prescribed effluent discharge standards while 22 STPs were found compliance with prescribed effluent discharge standards.

The percentage reduction of pollution load of STPs in river Yamuna in terms of TSS, COD and BOD concentration is depicted in the following graphical representation of Figure-6.12-6.14.

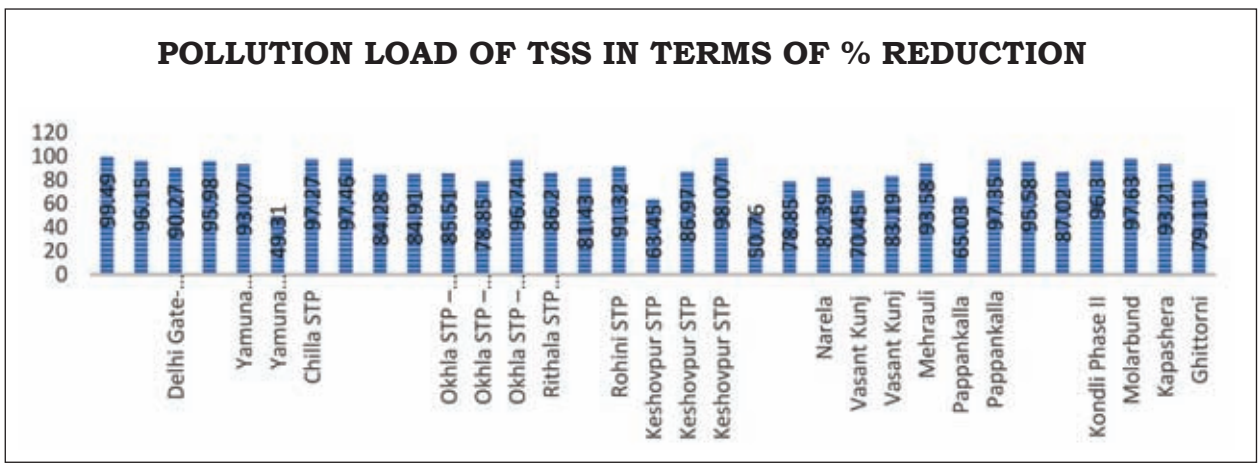



**Figure – 6.12 : Pollution Lo ad of STPs in terms of % reduction of TSS concentration**

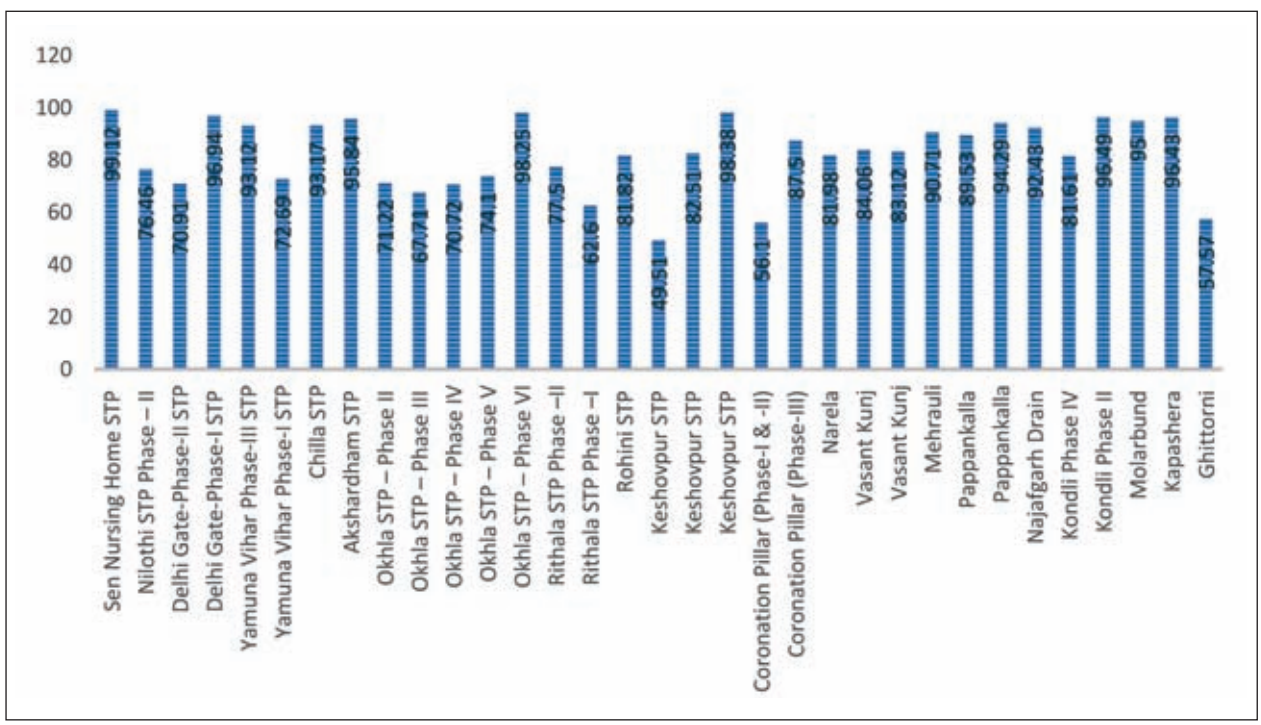



**Figure – 6.13 : Pollution Load of STPs in terms of % reduction of COD concentration**

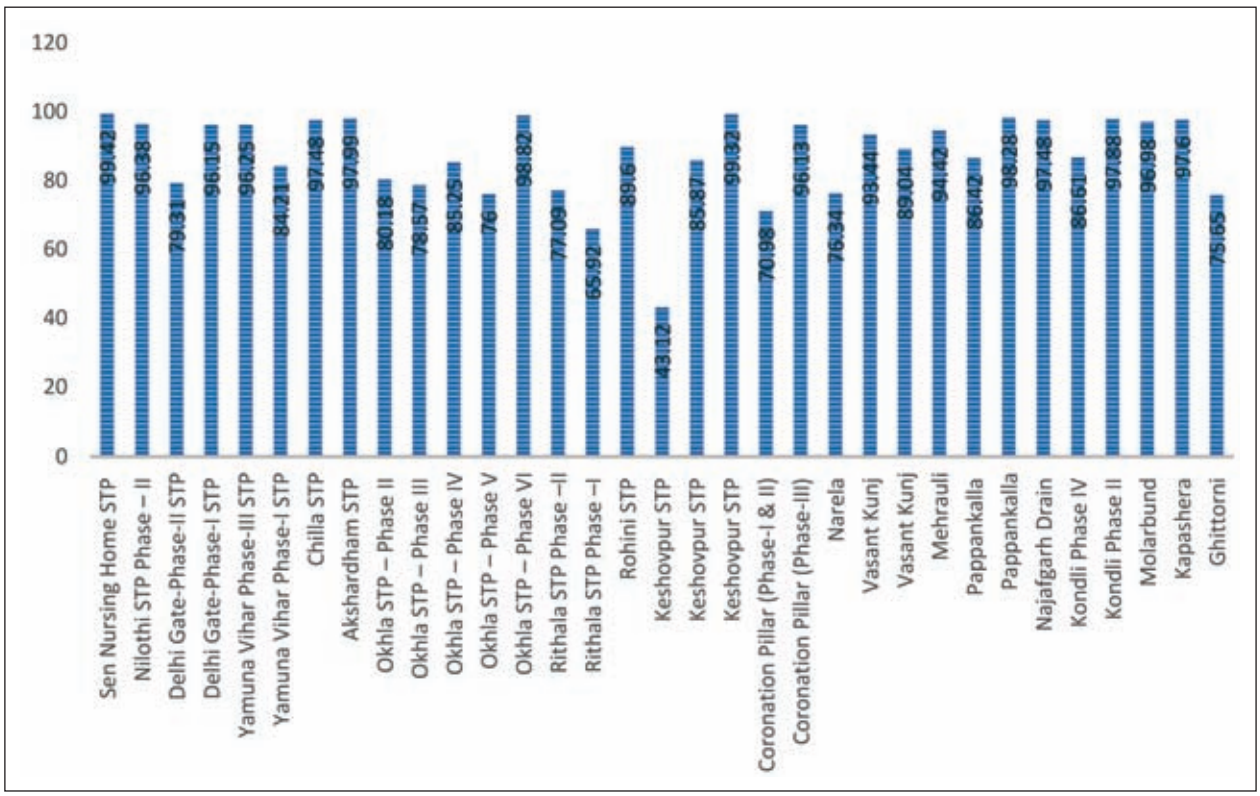



**Figure – 6.14 : Pollution Load of STPs in terms of % reduction of BOD concentration**

## 6.8 Performance of Common Effluent Treatment Plant (CETP)

Small Scale Industrial Units (SSIs) have an important role in industrial development in the country. SSI units generally face difficulty to establish and operate individual effluent treatment plants due to their limited size and scale of operations. However, as SSI units are generally located as clusters in industrial areas/estates, the concept of Common Effluent Treatment Plant (CETP) for the entire effluent from the industrial area has been developed to achieve satisfactory treatment through their collective efforts. The monitoring and enforcement of a CETP as a single pollution source also become easier for regulatory agencies as compared to monitoring of large number of SSI units individually.

In order to strengthen the monitoring and the compliance through self-regulatory mechanism, all the CETPs need to install Online Continuous Effluent Monitoring System (OCEMS) and provide data connectivity to CPCB/SPCBs/PCCs, as per directions issued by CPCB.

Presently, 110 out of about 194 CETPs have installed the OCEMS and provided data connectivity to CPCB. All the remaining CETPs were also reminded/followed-up in this regard.

## 6.9 Environmental Sustainability & Carrying Capacity Assessment of the Tourist Hub of Upper Dharamshala Urban Area of Himachal Pradesh

In pursuance of an important directive of the Hon'ble National Green Tribunal, CPCB has recently completed a study on assessment of environmental carrying capacity of the Tourist Hub flourishing in the upper Dharamshalaurban area of Himachal Pradesh. The study includes estimation and forecasting of tourist influx, local population growth,

activity intensities, pollution inventories and environmental quality of the concerned area for future years with a 17 years horizon starting from 2018 to 2035. All possible sources and avenues of air, water and solid waste pollution have been considered. Findings of the study particularly pertaining toair environment carrying capacity have been presented here.

Carrying capacity is actually an indicator of potential for future growth keeping in view the resources such as air, water, land etc.All activities in a tourist zone like the upper Dharamshala area of Himachal Pradesh (including Mcleodganj, Bhagsunag and Dharamkot) primarily emerge in pursuit of serving the tourist population and as such tourist flow itself happens to be a very good indicator of the activities. Any area cannot have infinite carrying capacity and sustainable development can be achieved only if the development is within the carrying capacity of the region. Activities of an area will reach extreme limits after a certain period of time going beyond of which would cause all environmental indicators overshoot the respective acceptable limit-values or standards.

Assessing carrying capacity of the air environment is a very complex task. The frameworkessentially involves identification of all possible sources or activities releasing air pollutants, inventory of sources and projection of emission loads, estimation and prediction of air quality concentrations from emission loads and finally, assessment of air quality concentrations of different pollutants against the yardstick of air quality thresholds i.e., applicable ambient air quality standards. First, the base year (2018) scenario was assessed based on available literatures and field visits/surveys and thereafter, future scenarios with regard to activity levels, consumption patterns, population (both local and tourist) growth, etc. were projected based on actual socio-economic and census trends applying appropriate statistical and analytical techniques using the SPSS platform. Next, emission inventories for all possible sources of air pollution done and CO, HC, NOx & PM loads in tons/year estimated up to 2035. Projected CO & PM emission loads (t/y) from vehicles have been shown in Figures-6.15 and 6.16 respectively. Finally, air quality forecasting done using EPA's simple rollback model.

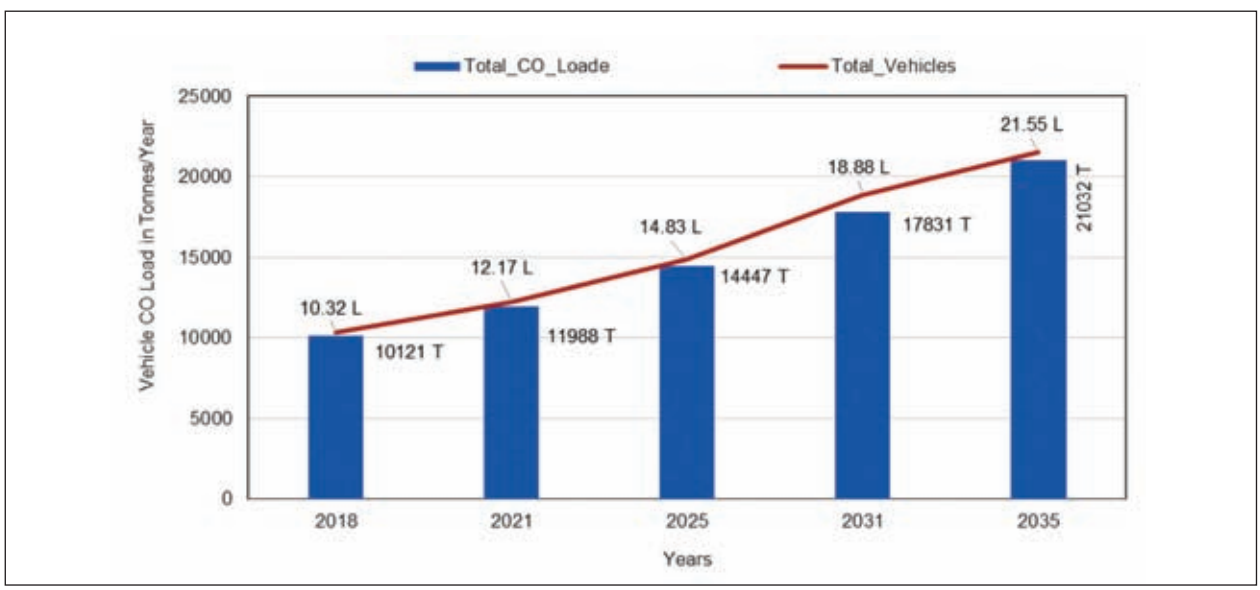



**Figure 6.15 : CO Emission Load from Vehicles (t/y)**

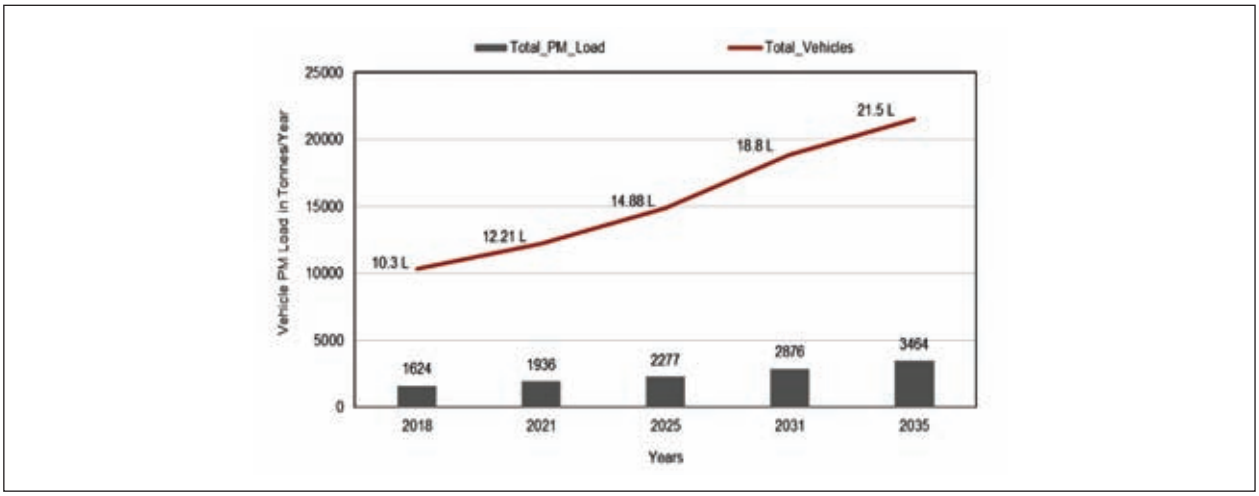
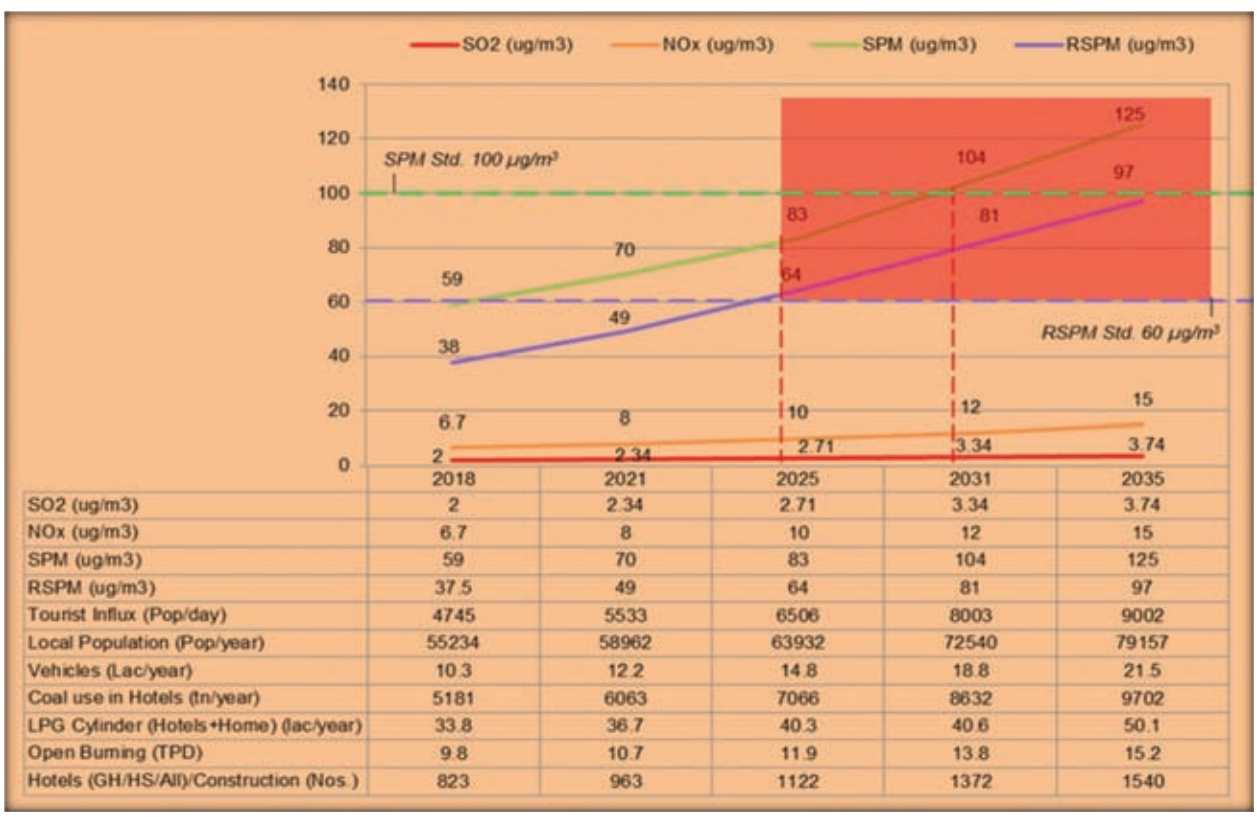



**Figure 6.16 : PM Emission Load from Vehicles (t/y)**

Air quality prediction and carrying capacity assessment done on two fronts- (i) year-on-year air quality prediction for the overall study area based on NAAQM concentrationdata (Figure-6.17) and (ii) rapid hotspot assessment done for the Mcleodganj area (Figure-6.18) (considering this core activity/business center within the study area as the hotspot) using actual 24-hr air quality monitoring data. Presenting the air environment carrying capacity analyses, this report finally proceeds to identify and demarcate the extreme points of time (when), resource levels (volume of activities) and tourist flow (equivalent tourist population) which the study area can afford to carry on and sustain with just before exhausting capacity and becoming unsustainable.




| | 2018 | 2021 | 2025 | 2031 | 2035 |
|---|---|---|---|---|---|
| SO2 (ug/m3) | 2 | 2.34 | 2.71 | 3.34 | 3.74 |
| NOx (ug/m3) | 6.7 | 8 | 10 | 12 | 15 |
| SPM (ug/m3) | 59 | 70 | 83 | 104 | 125 |
| RSPM (ug/m3) | 37.5 | 49 | 64 | 81 | 97 |
| Tourist Influx (Pop/day) | 4745 | 5533 | 6506 | 8003 | 9002 |
| Local Population (Pop/year) | 55234 | 58962 | 63932 | 72540 | 79157 |
| Vehicles (Lac/year) | 10.3 | 12.2 | 14.8 | 18.8 | 21.5 |
| Coal use in Hotels (tn/year) | 5181 | 6063 | 7066 | 8632 | 9702 |
| LPG Cylinder (Hotels+Home) (lac/year) | 33.8 | 36.7 | 40.3 | 40.6 | 50.1 |
| Open Burning (TPD) | 9.8 | 10.7 | 11.9 | 13.8 | 15.2 |
| Hotels (GH/HS/All)/Construction (Nos.) | 823 | 963 | 1122 | 1372 | 1540 |

**Figure-6.17 : Air Environment Carrying Capacity Analysis of Study Area (Year-on-Year)**

Figure 6.17 depicts the findings of the Year-on-Year air environment carrying capacity assessment for the whole Tourist hub based on NAAQM AQ data. As the figure indicates, the Tourist Hub of upper Dharamshalamay not face any problems with regard to $SO_2$ and NOx concentrations in the foreseeable future. However, particulate pollution will overshoot the respective air quality standards thereby stripping the air environment carrying capacity of the area past 2025. RSPM (blue line) is expected to surpass its mandated AQ standard of 60 µg/m$^3$ by the end of 2025 and finally reach 97 µg/m$^3$ during 2035 following a hooping 159% jump over its base year value of 38 µg/m$^3$. Further, SPM (green line) is predicted to record 104 µg/m$^3$ and 125 µg/m$^3$ during 2031 and 2035 respectively thereby exceeding its AQ standard of 100 µg/m$^3$ and breaching the air environment carrying capacity of the study area as a result (SPM standard of 100 µg/m$^3$ considered for a pristine natural environment like the study area). Clearly, the study area cannot carry on and sustain with the present pace and form of growth/activities going beyond 2025. As indicated in the table attached to Figure-6.17, carrying capacity of the study area air environment will at most have the capacity and ability to accommodate and sustain the tourist flow and activity levels corresponding to year 2025 i.e., tourist influx of 6508 tourist/day, 14.8 lakhs vehicles, 7066 tons of coal use in hotels, 43.3 lakhs LPG cylinder consumption. 11.9 TPD open waste burning and operation of 1122 hotels.Thus, air environment carrying capacity of the overall tourist hub can be represented as K= (Y, LP, TF) = k (2025, 63932, 6508).; where Y= year, LP= local population corresponding to year Y,TF= tourist flow corresponding to Year Y). Therefore, it is imperative for the local authorities to initiate effective control measures and regulate activities embracing the sustainable development policy framework.

**Rapid carrying capacity assessment of a Hotspot-** Having analyzed year-on-year air environment carrying capacity of the overall study area,it was further attempted to conduct a rapid carrying capacity assessment of a hotspot (within the study area) based on realistic on-site AQ monitoring and field survey data. The main purpose of this rapid assessment was to check how a prominent activity center within the study area hosting maximum activities fares with regard to air environment carrying capacity. Being a field-based exercise, this provided opportunity to crosscheck the actual intensities or levels of activities going on in the main activity zone which ultimately helped in fine-tuning the inventory.


| | 2018 | 2021 | 2025 | 2031 | 2035 |
|---|---|---|---|---|---|
| SO2 _McLeodganj_Square (µg/m3) | 2 | 2.31 | 2.73 | 3.36 | 3.68 |
| NOx _McLeodganj_Square (µg/m3) | 6.37 | 7.57 | 9.21 | 11.69 | 13.98 |
| RSPM _McLeodganj_Square (µg/m3) | 53 | 70 | 90 | 114 | 137 |
| AQI (Oak Ridge Index) | 41 | 54 | 68 | 87 | 104 |
| Pollution_Status | LAP | MAP | MAP | HAP | SAP |
| Vehicles (Nos /day) | 2867 | 3394 | 4134 | 5246 | 5986 |
| Coal_Use_Hotels (TPD) | 14.8 | 17.3 | 20.1 | 24.6 | 27.7 |
| LPG_Cyldr (Hotels+Home) (Nos /day) | 927 | 1007 | 1107 | 1277 | 1375 |
| Open_Burning(tTPD) | 5.9 | 10.7 | 11.9 | 13.8 | 15.2 |
| Hotels (GH/HS/All Construction (Nos ) | 823 | 963 | 1122 | 1372 | 1540 |

*LAP = Low Air Pollution (26<AQI<50)* *MAP = Moderate Air Pollution (51<AQI<75)* *HAP = Heavy Air Pollution (76<AQI<100)* *SAP = Severe Air Pollution (AQI100*

**Figure-6.18 : Air Environment Carrying Capacity Analysis of Mcleodganj Square**

Mcleodganj, the main center of tourism and business activities, was the selected hotspot in this case. Ambient air quality monitoring was conducted with the help of the Himachal Pradesh Pollution Control Board (HPPCB) at two locations (Mcleodganj Square & Bus stand) for two days during December, 2018. Information also collected through site inspections and field surveys. Using the 24-hr averaged air quality monitoring data and per day activity levels generated through field surveys, projection of activities and prediction of air quality concentrations were done on the per-day scale following the same approach as used in case of the year-on-year assessment. Further, the 24-hr average air quality monitoring data and the applicable air quality standards (µg/m$^3$) were converted into Oak Ridge Air Quality Index which was finally used as the threshold for carrying .capacity assessment for easy understanding.

Figure-6.18 above shows 24-hr RSPM level of 53 µg/m$^3$in Mcleodganj at present (Dec, 2018) which is on expected lines given recurrent traffic congestions, dominance of diesel vehicles and coal and open burning witnessed in Mcleodganjduring the field visits. This assessment also attests the fact that particulate pollution is an impending concern for the study area and more so for the famous tourist hub of Mcleodganj which is presently a 'Low Air Pollution' (LAP) zone registering index value of 41 (red line). Thus, the high activity zone of Mcleodganj already appears to be on the edge of losing (if not lost) air environment carrying capacity and the situation is only going to deteriorate over the years.

To sum up, the year-on-year analysis reveals that air environment carrying capacity of the study area as a whole will persist till 2025 with the capacity of sustaining and

accommodating tourist influx of 6508 tourist/day. Further, the rapid carrying capacity assessmentindicates that Mcleodganj, the prominent activity center of the study area, has already become a 'Low Air Pollution' (LAP) zone towards the end of 2018 just about surviving on the edge. Therefore, it is high time that the local authorities take corrective steps within the inner city limits in order to restore the carrying capacity. The local authorities do recognize that elevated RSPM in the Mcleodganj area is on account of congestion, traffic management and parking problems and have accordingly planned corrective actions in this regard. Taking swift actions at this stage like traffic restrictions in core areas, decongestion of Mcleodganj square and better traffic management practices would definitely help in arresting this rising RSPM trend.

# CHAPTER VII

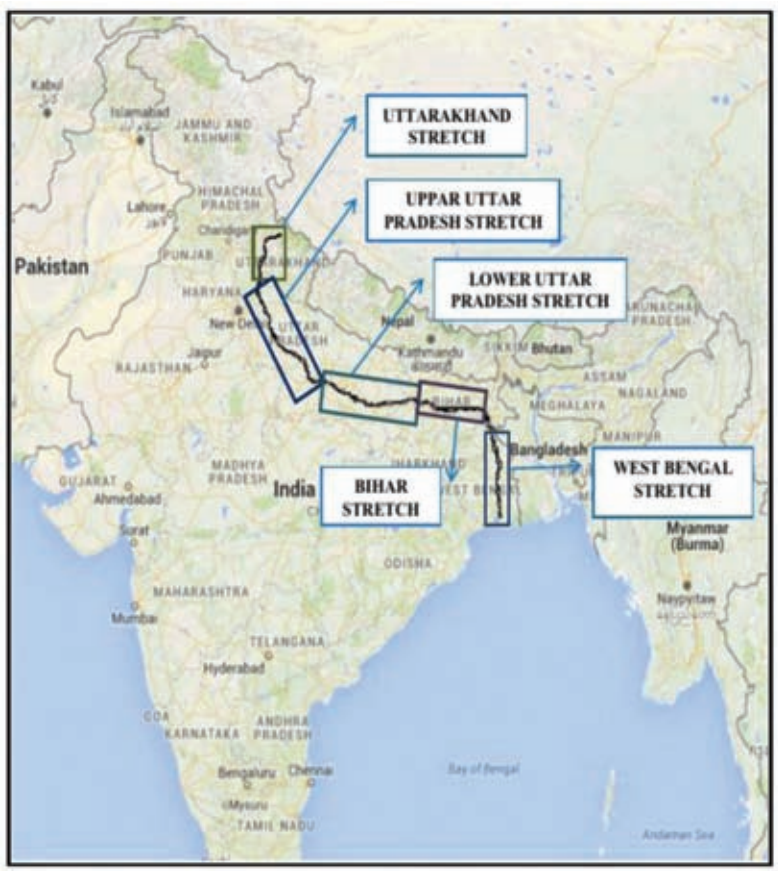
# ENVIRONMENTAL RESEARCH

Research and development activities play a major role in assessment and control of environmental pollution the important activities carried out during the year 2018-19 in various fields are summarised below:

## 7.1 MICRO-POLLUTANTS (PESTICIDES + TRACE HEAVY METALS) IN GANGA RIVER FROM GAUMUKH (ORIGIN) TO GANGA SAGAR (CONFLUENCE TO SEA) AT RIVER GANGA

Very limited studies have been documented on pesticides and heavy metals concentrations in water and sediments of Ganga river basin. The data available on pesticides and heavy metals in Ganga River is highly fragmented.

The Trace Organics Laboratory of Central Pollution Control Board had undertaken two rounds of systematic monitoring of micropollutants (pesticides + Trace Heavy Metals) in water and sediment of River Ganga at predetermined locations from Gaumukh (origin) to Ganga Sagar (confluence to sea) flowing through states of Uttarakhand, Uttar Pradesh, Bihar and West Bengal.




**Maps showing Ganga River basin and monitoring stretch**

**Bhagirathi at Gaumukh**

**Bhagirathi at Gangotri**

**Bhagirathi at Harsil**

**Confluence of Alakananda & Bhagirithi at Dev Prayag during Summar Season**

**Confluence of Alakananda & Bhagirithi at Dev Prayag during Winter Season**

**Ganga at Narora D/s**

**Ganga at Allahabad U/s**

**Ganga at Varanasi U/s**

**Ganga at Buxar**

**Ganga (Hugli) at Kolkata**

**Ganga (Hugli) at Ganga Sagar**

Following four groups of pesticides (Total 32 Nos.) and heavy metals (Total 14 Nos.) have been monitored in the water and sediment samples from predetermined monitoring locations at river Ganga.

| Pesticide Groups and Compounds analyzed | Heavy Metals analyzed | |
|---|---|---|
| **Organochlorine Pesticides (14 Nos.):** α-HCH, β-HCH, γ-HCH, δ-HCH, Endosulfan-I, Endosulfan-II, Endosulfan Sulfate, Dicofol, *p,p'*-DDE, *p,p'*-DDD, *p,p'*-DDT, Aldrin, Dieldrin, Heptachlor | Arsenic | Iron |
| | Mercury | Manganese |
| | Cadmium | Nickel |
| | Lead | Selenium |
| **Organo-phosphorous Pesticides (8 Nos.):** Chlorpyriphos, Dimethoate, Ethion, Malathion, Methylparathion, Phorate, Quinolphos, Profenophos | Chromium | Vanadium |
| | Copper | Zinc |
| | Cobalt | Antimony |
| **Synthetic Pyrethroids (6 Nos.):** α-Cypermethrin, Deltamethrin, Fenpropethrin, Fenvalerate, λ-Cyhalothrin, β-Cyfluthrin | | |
| **Herbicides (4 Nos.):** Pendimethalin, Alachlor, Butachlor, Fluchloralin | | |

## 7.2 STANDARDIZATION AND VALIDATION OF METHODOLOGY FOR DETERMINATION OF PHARMACEUTICALS AND PERSONAL CARE PRODUCTS (PPCPs) IN WATER AND WASTEWATER USING SOLID PHASE EXTRACTION (SPE) AND ULTRA PERFORMANCE LIQUID CHROMATOGRAPHY – TANDEM MASS SPECTROMETRY (UPLC- MS-MS)

Pharmaceuticals are the chemicals used for diagnosis, treatment, prevention of disease or alteration of structure/function of the human body. The presence of PPCPs in surface water is getting growing attention from environmental and health agencies all over the world and has been identified as one of the emerging pollutants due to their frequent presence in aquatic environment. Although the use of PPCPs is inevitable in our daily lives, the amount of pharmaceuticals and personal care products discharged into the aquatic and terrestrial environment through various point and non-point sources is a matter of concern. The pathway of PPCPs into the environment is typically associated with the waste stream-domestic wastewater (via septic systems or wastewater treatment plants), domestic solid wastes (via landfill leachate), commercial-industrial discharges (from hospitals, other healthcare facilities and drug manufacturing facilities) and animal husbandry such as animal feeding operations, aquaculture facilities and food production facilities.

| Groups of PPCP | Common Compounds |
|---|---|
| Nonsteroidal anti-inflammatory drugs | Diclofenac, Naproxen, Ibuprofen, Naproxen, Aspirin, Ketoprofen, Indomethacin, Paracetamol, etc. |
| Antidepressants | Fluoxetine, Paroxetine, Setraline (Citalopram, Escitalopram), etc. |
| Azole antifungal drugs | Ketoconazole, Clotrimazole, Fluconazole, Terbinafin, Miconazole, Amphotericin, etc. |
| Beta blockers | Atenolol, Propranolol, Metoprolol, Celiprolol, etc. |

| | |
|---|---|
| Antibiotics | Sulfonamides, Penicillins, And Tetracyclins, (Noxacin, Gentamicin, Neomycin, Ciprofloxacin), Sulfamethoxine, Erythromycin, Neomycin, Streptomycin, Ampicillin, etc. |
| Narcotics/anesthetics | Propoxyphene, Morphine, Heroin, etc. |
| Antihistaminic | Cetirizin, Benadryl, Tavest, Drixoral, etc. |
| Supplements | Zostavax, Golimumab, Ascorbic Acid (Vitamin C), Biotin (Vitamin D), Antioxidants (Vitamin E), Carotinoids (Vitamin A), etc. |
| Birth control pills | Demulen, Desogen, Norinyl, Yasmin, etc. |
| Personal Care Products (PCPs | Triclosan, Triclocarbon, Methyl Paraben, Ethyl Paraben, Propyl Paraben, Butyl Paraben, etc. |

There has been increasing concern of environmental pollution resulting from increased use and discharge of conventional allopathic and veterinary medicines in parent or metabolite forms posing risk to the ecosystem. It has been realized that unintentional exposure to antibiotics, anti-parasitics, anti-fungals and anticancer medicines are the causes for harmful effect on human health. Antibiotics may induce resistance in humans and animals through prolonged exposure and lead to treatment ineffectiveness on a longer run.

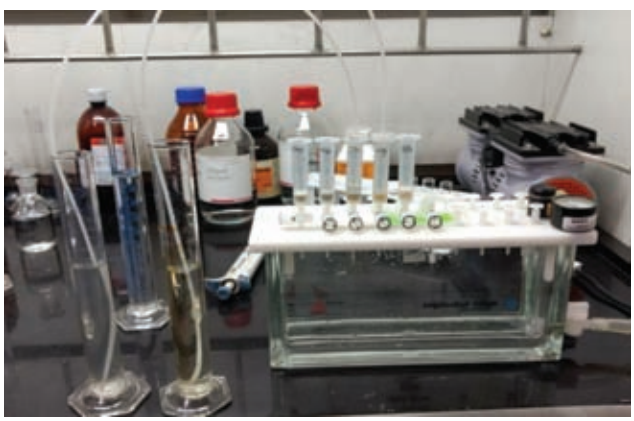
Central Pollution Control Board, has undertaken standardization and validation of methodology for determination of selected Pharmaceuticals and Personal Care Products (PPCP) using Solid Phase Extraction (SPE) and Ultra Performance Liquid Chromatography-Tandem Mass Spectrometry (UPLC-MS-MS). Methodology for analysis has been standardized, validated and practised with following Quality Control / Quality Assurance matrix:

### LC-MS-MS Performance, Recovery and detection limits of PPCPs in water

| S. No. | Compounds Name | Instrument Parameters | | | | Quality Control Parameters | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | RT | Multi-level Calibration | | | Spiked recovery (%) | | | LOD (ng/L) | LOQ (ng/L) |
| | | | Range | Reg. Equation | $R^2$ | Range | Mean | SD | | |
| 1 | Ammoxicilline | 4.28 | 50-250 | y = 4.66x - 33.2 | 0.991 | 88-100 | 93 | 3.8 | 20 | 80 |
| 2 | Cefixime | 4.66 | 50-250 | y = 658.7x - 299.4 | 0.997 | 86-100 | 91 | 6.4 | 40 | 130 |
| 3 | Cefadroxile | 4.28 | 50-250 | y = 165.8x - 38.7 | 0.999 | 90-105 | 96 | 5.7 | 40 | 120 |
| 4 | Fluconazole | 4.75 | 50-250 | y = 2870.x + 15746 | 0.999 | 93-109 | 100 | 6.6 | 40 | 140 |
| 5 | Diclofenac | 8.20 | 50-250 | y = 3110.x + 9772 | 0.998 | 84-100 | 91 | 6.8 | 40 | 140 |
| 6 | Levofloxacin | 4.33 | 50-250 | y = 15409x + 32432 | 0.999 | 91-112 | 100 | 7.8 | 50 | 160 |
| 7 | Ciprofloxacin | 4.32 | 50-250 | y = 7909.x + 19743 | 0.999 | 91-109 | 99 | 7.5 | 50 | 150 |
| 8 | Mefenamic Acid | 11.72 | 50-250 | y = 7819.x + 10989 | 0.998 | 92-108 | 98 | 7.0 | 40 | 140 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 9 | Metronidazole | 4.69 | 50-250 | y = 1320.x + 27262 | 0.999 | 94-111 | 101 | 6.2 | 40 | 120 |
| 10 | Azithromycin | 2.72 | 05-25 | y = 77270x + 82241 | 0.991 | 57-105 | 83 | 21.8 | 10 | 30 |
| 11 | Doxycyline | 2.69 | 05-25 | y = 10197x - 55019 | 0.989 | 86-132 | 108 | 21.5 | 10 | 30 |
| 12 | Chloramphenicol | 2.98 | 05-25 | y = 60420x - 76010 | 0.996 | 120-158 | 142 | 16.9 | 30 | 90 |
| 13 | Norfloxacin | 2.59 | 05-25 | y = 55683x - 30026 | 0981 | 41-50 | 47 | 4.04 | 15 | 45 |
| 14 | Ofloxacin | 2.60 | 05-25 | y = 2E+06x - 22372 | 0.989 | 64-72 | 65 | 7.75 | 10 | 30 |
| 15 | Ampicillin | 2.60 | 05-25 | y = 8316x - 4126 | 0.970 | 53-78 | 64 | 10.1 | 15 | 45 |
| 16 | Nalidixic Acid | 3.28 | 05-25 | y = 3E+06x - 2E+06 | 0.990 | 89-101 | 101 | 11.5 | 15 | 45 |
| 17 | Ibuprofen | 1.82 | 0.1-5 | Y = 4426.7x + 579.45 | 0.996 | 79-110 | 100 | 10 | 0.10 | 0.30 |
| 18 | Troclosan | 2.50 | 0.1-5 | y = 61014x + 13713 | 0.995 | 90-108 | 100 | 6 | 0.15 | 0.50 |
| 19 | Bisphenol-A | 2.11 | 0.1-5 | Y = 43214x + 10565 | 0.991 | 96-102 | 100 | 2 | 0.10 | 0.40 |

*y- peak area, x- mass of compound (ng)



**Solid Phase Extraction (SPE) of Wastewater Samples for PPCPs Analysis**


**Liquid Chromatography - Tandem Mass Spectrometer (LC-MS-MS)**

## 7.3 Spike recovery study for Chemical Oxygen Demand (COD) in presence of high Chloride contents

CETP Nandesari, Baroda (Gujrat) receives waste water having high organic matter along with very high Chloride contents. CETP has faced problem in analysis of such samples for COD due to chloride interference. To demonstrate accuracy in COD analysis in presence of Chloride, a study "Spike recovery study for COD in presence of high Chloride contents" was undertaken by CPCB.

Under the study wastewater samples containing both domestic and industrial waste was used. The samples were spiked with potassium hydrogen phthalate and sodium chloride. The samples were analysed by five analysts separately. The analysis method used was APHA 5220B. The method recommends use of Mercuric sulphate for the removal of chloride interference only if chloride content in the sample is less than 2000 mg/l. The spiked sample was diluted prior to analysis (20 times) to bring down chloride concentration below 2,000 mg/l, but ensuring COD value above detection limit of 10 mg/lit. The finding of study reflect significant recovery of spiked COD, which was in the range of 84% to 111% with an average of 92.5%

## 7.4 Recognition of laboratories under the Environment (Protection) Act, 1986

Central Pollution Control Board, has been delegated the powers for recognition of Environmental laboratories of Government/Semi Government Organizations, Public Sector undertaking and Educational Institutions under section 12(1)(b) & 13 to carry out the function entrusted to the Environment laboratories under the Environment (Protection) Act, 1986.

Ministry of Environment & Forest has constituted the Expert Committee at CPCB for operationalization/ adoption of revised Guidelines for recognition of Environmental laboratories under the Environment (Protection) Act, 1986. During April 2018 to March 2019 02 applications of Government/Public Sectors Environmental Laboratories have been received, scrutinized and comments put-up before the Expert Committee and on recommendations of Expert Committee, approved in the Board Meeting and have been notified in Government of India Gazette for recognition under the Environmental (Protection) Act 1986 :

i. MIT Centre for Analytical Research and Studies
Maharashtra Institute of Technology
MIT-CARS, MIT Campus
Maharashtra

ii. Central Laboratory
U.P. Pollution Control Board
TC-12 V, Vibhuti Khand
Gomti Nagar, Lucknow-226010
Uttar Pradesh

# CHAPTER VIII

# ENVIRONMENTAL TRAINING

The water (Prevention and control of Pollution) Act, 1974 and the Air (Prevention and Control of Pollution) Act, 1981 emphasize that imparting training is one of the functions of the Central Pollution Control Board. Training in various aspects of prevention, abatement and control of pollution to the identified target groups is important. The target groups include officials dealing with planning, funding and implementation programmes for prevention and control of pollution in the Central Government and State Government, the Central and State Pollution Control Boards, the local bodies, operators of industrial and municipal wastewater treatment plants and NGOs engaged in management of pollution control programmes.

During the year 2018-19, CPCB organized following Trainings through reputed training/R&D/ Professional institutes in various priority areas related to environment

1 Laboratory Quality Management and Internal Audit (As per ISO 17025: 2017 version) & NABL Requirements

2 Effective Management of Hazardous Waste including E-waste – Co-processing and Co-incineration – Hazardous Waste Rules & Field Visit

3 Noise Monitoring and Control Techniques

4 Integrated Waste Management – Municipal Waste, Plastic Waste, Bio-Medical Waste, Bio Composting, Landfill Gas Management & Control and Waste to Energy with Field Visit

5 Advance Instrumental Analytical Techniques (AAS, ICP, XRF, GC, GC-MS, HPLC, IC, EC/OC, TOC, etc.)

6 Accidental Spill – Emergency Response and Environmental Impact Assessment – Future Perspective

7 Taxonomical Identification of Macro Invertible in Biological Testing

8 Occupational Health & Safety Management System (OHSMS) 18001: 2007 – Awareness and Audit Training

9 Design, Operation, Maintenance and Performance of STP, CETP, CBMWTFs

10 Cleaner Technologies & Waste Minimization for Prevention of Industrial Pollution and Four R's – Reduce, Reuse, Recycle and Recover – Case Studies

11 Air Quality Monitoring (Ambient & Source) and Continuous Ambient Air Quality Monitoring (CAAQM)


12 Biological Monitoring, Analysis & Testing (Microbiology, Bio-Assay & Bio-monitoring), SOPs, Data Interpretation and Quality Assurance

13 Global Warming, Climate Change and Disaster Management – Future Perspective

14 Future Perspective in Environmental Bio-Technologies

15 Indoor & Outdoor Air Pollution, Standards and Impact on Human Health – Case Studies


16 Planning, Designing, Monitoring and Inspection of Waste Water Treatment Plants and APC Measures

17 Monitoring of Notified Air Pollutants as per revised NAAQS 2009

18 Carbon Sequestration Estimation and Nitrogen Footprint Assessment

19 Environmental Legislations, Interpretation, Enforcement, Legal and Statutory Requirements – Case Studies


20 Environmental Data Interpretation, Compilation, Analysis, Presentation and Reporting – Hands-on-Training and Case Study

21 Water Quality Monitoring of Surface, Ground, Waste Water/Effluents, Data Interpretation and Quality Assurance

- More than three hundred officials from CPCB, State Pollution Control Boards/Committees and other Government Agencies were participated and benefited from the above training programmes.
- CPCB also organized two training programmes on "Budgeting, Auditing & Financial Controls in Government Organizations" and "Effective Implementation of Various Service Rules" to Administrative & Accounts staff through ISTM, DoPT (Govt. of India), Delhi. Fifty officials attended the training programmes.

- CPCB organized in-house orientation training programme for newly recruited Technical & Scientific Personnel. Seven officials attended the programme.
- CPCB organized in-house orientation training programme for Administration & Accounts personnel. Fifteen officials attended the programme.
- Seventeen CPCB officials participated in training programmes organized by other organizations viz. CSE, DST, IIPA, etc.
- Twelve officials from CPCB participated in International training programmes/workshop/ seminars etc. during 2018-19 sponsored by the National/International Agencies/ Organizations.

# CHAPTER IX

# ENVIRONMENTAL AWARENESS AND PUBLIC PARTICIPATION

## 9.0 EXHIBITIONS

The Central Pollution Control Board has been participating in scientific and technical exhibitions for educating the masses for prevention and control of environmental pollution.

During the year 2018-19 CPCB participated in following exhibitions:

1. Women Empowerment – 2018 during 22nd to 24th June, 2018 at Jammu;
2. Government Achievements & Schemes Expo-2018 during 27th to 29th July, 2018 at Pragati Maidan, New Delhi;
3. 22nd National Exhibition on the theme of " New India: Future Leader of the Globe" during 03rd to 06th August 2018 at Kolkata;
4. "23rd Sundarban Kristi Mela-O-Loko Sanskriti Utsab" organized by Kultani Milon Tirtha Society, during 20th to 29th December 2018 at West Bengal;
5. Shining Maharashtra 2018 during 26th to 28th September, 2018 at Solapur;
6. India International Science Festival-2018 organized by Ministry of Science & Technology and Earth Sciences-GOI in association with Vijnana Bharati during 05th to 08th October, 2018 at Lucknow;
7. 5th Vibrant India and Meri Dilli Utsav – 2018 during 2nd to 4th November, 2018 at Delhi;
7. 106th Indian Science Congress: Pride of India Expo 2018 during 03rd to 07th January at Lovely Professional University, Phagwara, Punjab;

## 9.1 Kumbh Mela-2019 Exhibition

The CPCB along with Ministry of Environment, Forest and Climate Change participated in the exhibition organized during Kumbh Mela to create public awareness. CPCB presented CETP model of Zero Liquid Discharge System for Waste water, Chromium recovery and Electricity generation from biogas for combined tanneries and the model with the theme "Smart Solution leading to less Pollution". Hon'ble Minister of Environment, Forest and Climate Change Dr. Harsh Vardhan visited the stall and appreciated the efforts. Other environmental issues like plastic pollution; reuse of water; water quality of river Ganga & its tributaries and significance of rivers for land & aquatic animals as well as for ecology were also discussed with visitors during the exhibition.


## 9.2 MASS AWARENESS ON WORLD ENVIRONMENT -2018

The theme for World Environment Day in 2018 was "Beat Plastic Pollution". on occasion of WED-2018, CPCB urged that Governments, industry, communities, and individuals to come together and explore sustainable alternatives and urgently reduce the production and excessive use of plastic polluting our oceans, damaging marine life and threatening human health.

CPCB along with all the Regional Directorates undertaking following activities:

a. Preparation of Power Point presentation with a theme on "Beat Plastic Pollution";
b. Interactive Session and Painting-Drawing Competition at office and schools;
c. Awareness Programme at prominent places;
d. Awareness Programme at prominent residential Areas
e. Tree Plantation;
f. Cleaning of river Gomti at Lucknow;
g. Road Show to disseminate WED Theme and awareness to control Pollution due to Plastic Waste
h. Exhibition at Vigyan Bhawan, Delhi

## 9.3 केन्द्रीय बोर्ड में राजभाषा नीति का कार्यान्वयन

केन्द्रीय प्रदूषण नियंत्रण बोर्ड अपने मुख्यालय सहित छः क्षेत्रीय निदेशालयों– लखनऊ, भोपाल, वडोदरा, कोलकाता, बेंगलुरु तथा शिलांग और परियोजना कार्यालय–आगरा में भारत सरकार की राजभाषा नीति का कार्यान्वयन कर रहा है। हिन्दी अनुभाग द्वारा भारत के संविधान में निहित संघ की नीति के अनुसार राजभाषा अधिनियम, 1963 और राजभाषा (संघ के शासकीय प्रयोजनों के लिए प्रयोग) नियमों के साथ–साथ, भारत सरकार द्वारा समय–समय पर जारी किए आदेशों का अनुपालन सुनिश्चित किया जाता है। राजभाषा अधिनियम, 1963 की धारा 3(3) के तहत संकल्प, साधारण आदेशों, नियमों, अधिसूचनाओं प्रशासनिक या अन्य प्रतिवेदनों, प्रेस विज्ञप्तियां, संसद के एक या दोनों पटलों पर प्रस्तुत की जाने वाली रिपोर्टें, करार, संविदाएं, निविदाएं, सूचना आदि को द्विभाषी रूप में ही जारी किया जाता है।

केन्द्रीय प्रदूषण नियंत्रण बोर्ड के क्षेत्राधिकार के अंतर्गत निष्पादित किए जाने वाले काम–काज का विवरण इस प्रकार हैः–

क. रिपोर्टाधीन वर्ष 2018–19 के दौरान केन्द्रीय बोर्ड में राजभाषा अधिनियम/नियम तथा राजभाषा नीति संबंधी सभी प्रावधानों/आदेशों का अनुपालन सुनिश्चित किया जा रहा है। राजभाषा अधिनियम, 1963 की धारा 3(3) के तहत जारी सभी दस्तावेजों को द्विभाषी रूप में ही जारी किया गया। कार्यालय में राजभाषा अधिनियम, 1976 के नियम 8(4) के तहत सभी प्रवीणता प्राप्त अधिकारियों/कर्मचारियों को अपना काम–काज हिन्दी में करने के लिए व्यैक्तिशः आदेश जारी किए गए हैं।

ख. केन्द्रीय बोर्ड में कार्यरत 80 प्रतिशत से अधिक अधिकारियों/कर्मचारियों को हिन्दी में प्रवीणता/कार्य साधक ज्ञान प्राप्त होने पर कार्यालय को राजभाषा नियम, 1976 के नियम 10(4) के तहत अधिसूचित किया गया है। सभी अनुभागों में कार्यरत अधिकारियों एवं कर्मचारियों द्वारा टिप्पणियां हिन्दी में की जा रही हैं। केन्द्रीय बोर्ड द्वारा 'क' 'ख' और 'ग' क्षेत्र के साथ पत्राचार हिन्दी में किया जा रहा है।

ग. प्रत्येक वर्ष की भांति इस रिपोर्टाधीन वर्ष 2018–19 के दौरान प्रत्येक तिमाही में केन्द्रीय प्रदूषण नियंत्रण बोर्ड में कार्यरत अधिकारियों एवं कर्मचारियों के लिए 04 पूर्ण दिवसीय हिन्दी कार्यशालाओं का आयोजन किया गया था। कार्यशालाओं में 100 अधिकारियों एवं कर्मचारियों ने भाग लिया था। कार्यशालाओं के आयोजन का उद्देश्य राजभाषा नीतियों का सफल कार्यान्वयन सुनिश्चित करना है तथा कार्यशालाओं में सम्मिलित अधिकारियों एवं कर्मचारियों को सरकारी काम–काज हिन्दी में करने में आने वाली समस्याओं का समाधान करने के साथ–साथ उन्हें सरकारी काम–काज हिन्दी में करने के लिए प्रेषित किया जाता है, ताकि राजभाषा विभाग, गृह मंत्रालय, भारत सरकार द्वारा समय–समय पर जारी नीतियों के अनुपालन सुनिश्चित हो सकें।

घ. इस रिपोर्टाधीन वर्ष 2018–19 के दौरान केन्द्रीय प्रदूषण नियंत्रण बोर्ड में विभागीय राजभाषा कार्यान्वयन समिति की 04 बैठकें आयोजित की गई है। इन बैठकों में प्रायः राजभाषा हिन्दी के कार्यान्वयन में आने वाली समस्याओं तथा उससे संबंधित, मद्दों पर चर्चा करने के साथ–साथ इन समस्याओं का समाधान किया जाता है।

ङ इसके अलावा, इस रिपोर्टाधीन वर्ष के दौरान नगर राजभाषा कार्यान्वयन समिति (उत्तरी दिल्ली) द्वारा विभिन्न बैठकों एवं राजभाषा सम्मेलनों का आयोजन किया जाता है, जिसमें कार्यालय प्रमुख सहित प्रभारी, हिन्दी प्रभाग सम्मिलित होते हैं। इन बैठकों और सम्मेलनों में सदस्य कार्यालयों में राजभाषा नीति के कार्यान्वयन में आने वाली समस्याओं पर चर्चा के साथ–साथ उनका समाधान किया जाता है।

च. केन्द्रीय बोर्ड में प्रतिवर्ष भव्य स्तर पर हिन्दी दिवस का आयोजन किया जाता है। गत वर्षों की भांति इस वर्ष भी बोर्ड में 14 सितंबर, 2018 को डॉ. प्रशांत गार्गव, सदस्य सचिव केन्द्रीय प्रदूषण नियंत्रण बोर्ड की अध्यक्षता में हिंदी दिवस समारोह का आयोजन किया गया।

हिन्दी पखवाड़े के दौरान आयोजित विभिन्न प्रतियोगिताओं में केन्द्रीय बोर्ड के अधिकारियों एवं कर्मचारियों ने सक्रिय रूप से भाग लिया। इस अवसर पर हिन्दी टिप्पण/आलेखन, वैज्ञानिक एवं तकनीकी लेख, प्रश्नोत्तरी, हिन्दी वाद–विवाद प्रतियोगिताएं आयोजित की गई, जिनमें अधिकारियों एवं कर्मचारियों को प्रथम, द्वितीय एवं तृतीय पुरस्कारों से पुरस्कृत किया गया। हिन्दी दिवस कार्यक्रम की शोभा तब और अधिक बढ़ गई जब हिंदी के सुप्रसिद्ध ओजस्वी कवि श्री अलीहसन मकरेंडिया एवं हास्य कवि बृज किशोर पटेल ने अपनी कविताओं से उपस्थित अधिकारियों/कर्मचारियों को आनंदित किया।

छ. बोर्ड में प्रतिवर्ष प्रोत्साहन पुरस्कार योजना (टिप्पण/आलेखन) लागू की जाती है। रिपोर्टाधीन अवधि में भी प्रोत्साहन पुरस्कार योजना (टिप्पण/आलेखन) लागू की गई, इस प्रतियोगिता में 10 प्रतिभागियों को पुरस्कारों से सम्मानित किया गया।

ज. राजभाषा नीति के लक्ष्यों की प्राप्ति हेतु केन्द्रीय बोर्ड से बिहार, झारखंड, हरियाणा, हिमाचल प्रदेश, मध्य प्रदेश, छत्तीसगढ़, राजस्थान और उत्तर, प्रदेश, उत्तरांचल एवं अंडमान निकोबार द्वीप समूह तथा दिल्ली

हिन्दी दिवस समारोह के मंच संचालन करती वरिष्ठ हिन्दी अनुवादक

हिन्दी दिवस समारोह के दौरान पुरस्कार विजेताओं के नामों की घोषणा करती कनिष्ठ हिन्दी अनुवादक


हिन्दी दिवस के दौरान कविता पाठ करते श्री बृज किशोर पटेल


हिन्दी दिवस के दौरान कविता पाठ करते श्री बृज किशोर पटेल

सांस्कृतिक कार्यक्रम प्रस्तुत करती श्रीमती अदिति शर्मा

"जल गुणवत्ता के जैविक संकेतक" नामक पुस्तक का लोकार्पण


समारोह के दौरान सदस्य सचिव महोदय का संबोधन


समारोह के दौरान प्रशासनिक अधिकारी (रा.भा.) का धन्यावाद ज्ञापन

हिन्दी दिवस समारोह का आनंद लेते अधिकारी एवं कर्मचारी

के साथ–साथ गुजरात, महाराष्ट्र तथा पंजाब राज्यों की सरकारों तथा संघ शासित क्षेत्र चंडीगढ़ के साथ पत्राचार हिन्दी में किया गया है।

झ. राजभाषा हिन्दी की प्रगति में केन्द्रीय बोर्ड के सभी अधिकारियों एवं कर्मचारियों की मोहरें एवं नामपट्टिकाएं द्विभाषी रूप में बनवाई गई हैं। इसके अतिरिक्त, हिन्दी शिक्षण योजना के अंतर्गत कार्यालय में कार्यरत अधिकारियों/कर्मचारियों को हिन्दी, हिन्दी टंकण और हिन्दी आशुलिपि में प्रशिक्षण का शत–प्रतिशत लक्ष्य प्राप्त किया गया है।

- **क्षेत्रीय निदेशालयों एवं परियोजना कार्यालय आगरा में हिन्दी संबंधी गतिविधियां**

केन्द्रीय बोर्ड के मुख्यालय की भांति सभी छः क्षेत्रीय निदेशालयों व परियोजना कार्यालय आगरा में भी वर्ष 2018–19 के दौरान राजभाषा अधिनियमों का अनुपालन सुनिश्चित किया गया। इस क्रम में अधिकांश क्षेत्रीय निदेशालयों में क्षेत्रीय निदेशक की अध्यक्षता में विभागीय राजभाषा कार्यान्वयन समिति की नियमित बैठकें आयोजित की गई और कर्मचारियों एवं अधिकारियों को अपना सरकारी काम–काज हिन्दी में करते समय आने वाली कठिनाई व झिझक को दूर करने के लिए 04 कार्यशालाएं आयोजित कराई गई। सितंबर माह में हिन्दी दिवस के दौरान विभिन्न प्रतियोगिताएं जैसे हिन्दी टंकण प्रतियोगिता, टिप्पण–आलेखन प्रतियोगिता एवं श्रुतलेख का आयोजन किया गया, जिसमें सभी अधिकारियों एवं कर्मचारियों ने सक्रिय रूप से भाग लिया। इस दौरान विजेताओं को पुरस्कार प्रदान कर सम्मानित किया गया।

## 9.4 Redressal of Public Grievances

Centralized Public Grievance Redress and Monitoring System (CPGRAMS), is a Government of India Portal aimed at providing the citizens with a platform for redress of their grievances. The functioning of Public Grievance Redress Machineries in various Ministries/Departments/Organizations is regularly reviewed by a Standing Committee of Secretaries under the Chairmanship of Cabinet Secretary with Additional Secretary Department of Administrative Reforms and Public Grievances as member-secretary.

Department of Administrative Reforms & Public Grievances is the nodal agency in respect of policy initiatives on public grievances redress mechanism and citizen centric initiatives. The Portal is Designed, Developed & Hosted by NIC. Content owned, maintained and updated by Department of Administrative Reforms & Public Grievances.

In CPCB, the Public Grievance received through Portal are being disposed of on regular basis with fair objective and within stipulated time period. Based on the nature of the grievances, the grievances are either investigated in CPCB or sent to the concerned SPCB/ PCC for taking appropriate action and action taken report is uploaded on the portal. During the year 2018-19, total 2025 public Grievances were disposed of.

## 9.5 Redressal of Public Complaints received at Central Control Room, CPCB through Social Media

Initially, the mobile App Sameer was launched in the year 2016 to provide a forum to citizen to lodge complaints, and later along with Sameer App complaints pertaining to air pollution are being received through following platforms;

- Social Media (Twitter and Facebook)
- Website
- E-Mails
- Letters

Sameer App is used by public to get updates on air quality of the area of their area, as well as provides a platform to lodge air pollution related problems. Complaints lodged on Sameer are automatically assigned based on the geo location of the area to concerned Nodal Agencies such as Municipal Corporations, Development authorities, Industrial Department, Traffic Police, Transport Department, public Construction Agencies, etc. depending on type of pollution problem reported. After receipt of complaints, Nodal Agencies are expected to redress the complaint within 24 hours and action taken along with documentary evidence or visual proof are uploaded on CCR. GRAP-CPCB Mobile App is also designed exclusively for Nodal Agencies for taking necessary action on the complaints lodged. Daily status of redressing complaints is being monitored by Central Control Room and delays are notified to agencies from time to time. Sameer App is available in both Android and IOS versions and can be downloaded from Google play store as well as App Store.

A dedicated e-mail **aircomplaints.cpcb@nic.in** has been created for receiving Air Pollution related complaints. Complaints received through Website and e-mails are being transferred to Sameer App manually by CCR team so as to facilitate central monitoring.

In compliance to the Orders of Hon'ble Supreme Court of India, dated 29/10/2018 in the matter of 13029 of 1985, Central Pollution Control Board has created Social Media accounts to facilitate citizens to report air pollution related complaints. A dedicated Media

Management Agency has been engaged by CPCB to handle social media platforms and also to associate with CCR team in performing daily tasks, such as assigning/ lodging the complaints, transferring complaints and taking follow-ups with all the stake holders.

Each Nodal Agency was requested to develop their own social media Handles/Accounts so that complaint received on Social Media platforms of CPCB can be forwarded to respective agencies on their respective social media Handles/Accounts. Upon receiving a complaint forwarded by CPCB, nodal agency shall inform action taken on the same handle/account through which complaint was received with copy to CPCB's Handle/ Account. Media Management Team uses a utility, such as MS Excel to maintain database of complaints received and monitors daily status of complaints resolved. Details of Social media accounts are given below;

| | | |
|---|---|---|
| Facebook Account | : | CPCBIndia |
| Twitter Account | : | CPCB_OFFICIAL |

To achieve effective compliance in addressing air pollution related complaints, CPCB had several meetings with nodal agencies to review their performance and also to provide necessary information / guidance. Based on daily performance reports prepared by CCR team, directions were issued to responsible agencies under Section 31A of Air (P&C) Act, 1981 in case they failed to take adequate action against air pollution related public complaints. Directions were also issued to show-cause why prosecution cannot be initiated for failing to act on air pollution related public complaints.

- **Use of Social Media**

Apart from using social media platform for the purpose of managing public complaints on air pollution, Social media can also be used to effectively communicate the functions and mandate of SPCBs/CPCB to public and to impart environmental education to public. Social media can effectively used to make citizens aware of their responsibilities and their role in achieving better environment. At present social media platform of CPCB is being used in areas;

- Providing daily information on Air Quality projection in Delhi NCR
- Imparting environmental education
- Run educational campaigns on specific subjects like waste management,
- Awareness on environmentally sustainable life styles

The following scope of work is envisaged for creating an effective media management team in SPCBs/PCCs;

- Social Media creation and maintenance of social media platforms including public complaints and query management.
- Creative Designing - Content generation, recreation or repackaging of the available content in the forms of videos, animations etc.
- Virality of Content - Multiply the reach of content, promote content and make it viral on social media platforms.
- Media Outreach Strategy - Communications strategy plan that imparts awareness

and education towards – citizen's responsibilities etc.

- Storage - Storage of raw footage and processed content for the purpose of archive in digital formats
- Reporting – Reporting social media statistics including effectiveness analysis

Some of the creatives publish on CPCB's Social Media Platforms for creating Mass Awareness are:





Central Pollution Control Board @CPCB_OFFICIAL · Feb 15
Avoid Single Use Plastic.
AVOID
SINGLE USE OF PLASTIC BAGS/PRODUCTS


Central Pollution Control Board @CPCB_OFFICIAL · Feb 20
Use Compostable Bags to Reduce Plastic Waste!
LET US TAKE CARE OF OUR ENVIRONMENT
SWITCH TO COMPOSTABLE BAGS


Central Pollution Control Board @CPCB_OFFICIAL · Mar 6
There is no magic wand to save the world, just do it by being a responsible citizen. #BeAResponsibleCitizen #DoLittleLittleGoodThings #CPCB
BE A RESPONSIBLE CITIZEN
Start planning your kitchen activity to avoid wastage of fuel and water.
BE A RESPONSIBLE CITIZEN
BE A RESPONSIBLE CITIZEN


Central Pollution Control Board @CPCB_OFFICIAL · Mar 8
When Women Thrives. The Environment Thrives.
Happy Women's Day
8TH MARCH

# CHAPTER X

# ENVIRONMENTAL STANDARDS INCLUDING SCHEDULE FOR THEIR ENFORCEMENT

## 10.1 DEVELOPMENT OF ENVIRONMENTAL STANDARDS

The Ministry of Environment, Forest & Climate Change (MoEF&CC) formulates and notifies standards for emission/ discharge of environmental pollutants viz. Air pollutants, water pollutants and noise limits, from industries, operations or processes with an aim to protect and improve the quality of the environment and abate environmental pollution. The standards are framed in consultation with all concerned stakeholders for the benefit of environment. The process is based on the best practices and techno-economic viability. The notification of standards also involves formulation of load based standards i.e., emission/discharge limits of pollutants per unit of product obtained/ processes performed to encourage resource utilization efficiency and conservation aspects.

The draft standards for any industrial process/ operation are recommended by Central Pollution Control Board (CPCB) in the form of 'Draft Notification'. The 'Draft Notification' is subjected to stakeholder consultation including general public for 60 days, as per EPA act, 1986. The comments are complied and technically examined by CPCB and modifications if any, are carried out in the Final Notification. The modified Final Notification is placed before the 'Expert Committee (EC) on Environment Standard' of MoEF&CC for approval. Besides the MOEF&CC and CPCB officials, the EC of MoEF&CC comprises of representatives from industry associations, subject expert and concerned ministries of the industrial sectors. The EC recommended Final Notification is placed for approval of Hon'ble MEF&CC. After carrying out due legal vetting from Ministry of Low and Justice of the proposal and then notification is published in Gazette of India.

Status of environmental standards development during 2018-19 is summarized below:

- Standards for Airport Noise, Man-Made Fibre (revision), Thermal Power Plant-Amendment (water consumption and stack height), Paint Industry (revision) and Kerosene were notified.
- Draft Notification for Brick Kiln (revision), Fermentation (revision), Coffee Industry (revision) and Tannery Industry (revision), Automobile Service Stations and Bus Depots have been published.
- Standards for Pulp and Paper Industry (revision), Diesel Locomotives, Bulk Drug and Formulation Industry (Pharmaceutical)-revision, Iron and Steel Industry (revision), Amendment on Water Quality Standards for Coastal Water Marine Outfall in respect of Primary Water Quality Criteria for Class SW-III Water and Class SW-V Water and Hot Mix Plant have been presented before the Expert Committee of MoEF&CC and is under the process of draft notification for finalization.

# CHAPTER XI

# PROSECUTIONS LAUNCHED, CONVICTION SECURED AND DIRECTIONS GIVEN FOR CLOSURE OF POLLUTING INDUSTRIES

## 11.1 Evaluation of Comprehensive Environmental Pollution Index (CEPI) in 100 Polluted Industrial Areas (PIAs) during 2018

CPCB has evolved the Comprehensive Environmental Pollution Index (CEPI) in the year 2009. CEPI is a rational number to characterise the quality of the environment at a given location following the algorithm of source, pathway and receptor. CEPI relates to evaluation of environmental quality in the given area which is based on air, surface water and ground water pollution as well as on industries and health statistics, etc. According to this index, if score exceeds 70 in the scale of 0-100, then the industrial cluster is termed as 'Critically Polluted Area (CPA)'.

Meanwhile, the CEPI concept was revised, in concurrence with Ministry of Environment, Forest & Climate Change (MoEF&CC), in the year 2016 which was formulated by eliminating the subjective factors but retaining the factors which can be monitored, in order to ensure greater transparency and objectivity in evaluating the environmental quality scenario in the industrial clusters.

In continuation of the CEPI evaluation, carried out by CPCB during 2009, 2011, and 2013, CPCB again in concurrence with MoEF&CC carried out environmental quality monitoring in 100 polluted industrial areas (PIAs) across the country by engaging four laboratories for assessment of CEPI based on CEPI-2016. The monitoring work was carried out, during 2017-18, in co-ordination with the respective SPCBs and Regional Directorates of CPCB.

Thereafter, CPCB undertook the process of analysing the environmental quality monitoring reports, for identifying critical pollutants in the respective PIAs. Also, as evaluation of CEPI scores needs additional information, namely, industrial sources/pollution control facilities and health /hospital data of the industrial clusters, the concerned SPCBs/PCC provided the desired information, based on which, the details of CEPI scores were evaluated by CPCB for the identified 100 PIAs located in 21 States. The evaluated details, including criteria pollutants, EPI scores, CEPI scores, demarcation of boundaries for identified industrial clusters, were forwarded to MoEF&CC for consideration and appropriate action.

## 11.2 Online Continuous Emission and Effluent Monitoring System of Industries

CPCB has issued directions to the State Pollution Control Boards and Pollution Control Committees for directing the highly polluting 17 category industries and CETPs, STPs, Common Hazardous & Bio Medical Waste Incinerators for installation of online effluent and emission monitoring systems to quantify the pollutants. Directions were also issued to five (05) State Pollution Control Boards to direct grossly polluting industries which are discharging effluents directly into River Ganga or its tributaries for installation of real time effluent monitoring systems for parameters such as pH, TSS, COD, BOD and other concerned parameters.

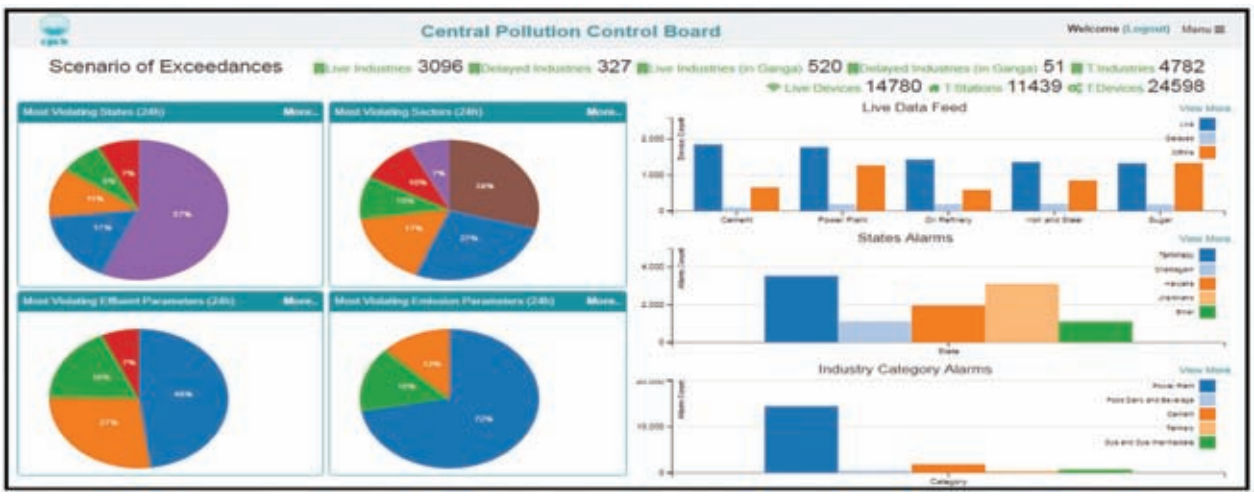
Subsequently, OCEMS are installed by the industries for transmission of emission & effluent data. Presently, CPCB is getting emission and effluent data of the industries from

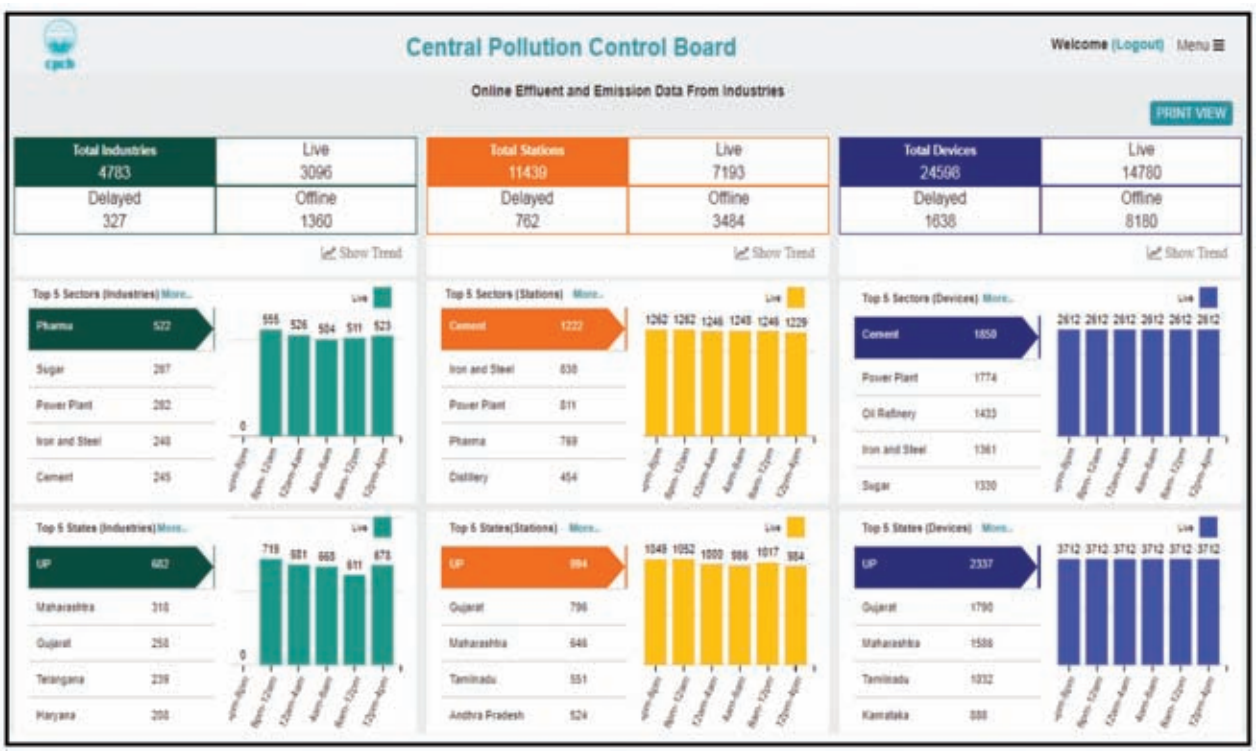
42 Technology Providers by a common Application Program Interface (API) software at the central portal in the format as shown in figure below.

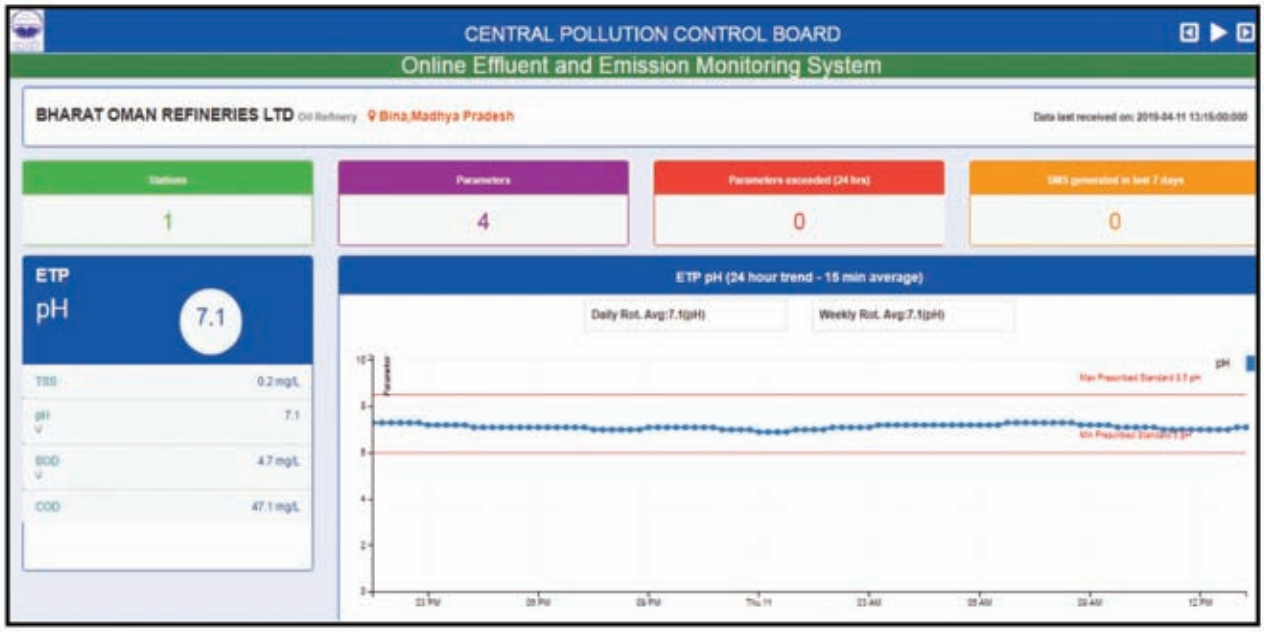
To achieve a reliable and automatic centralized system to control pollution of industries, CPCB has developed the "Guidelines for Continuous Emission & Effluent Monitoring Systems" which summarizes all available monitoring technologies. As per the guidelines, the instrument / analyzer system shall have provision of remote calibration, for verification of OCEMS performance for each industry.

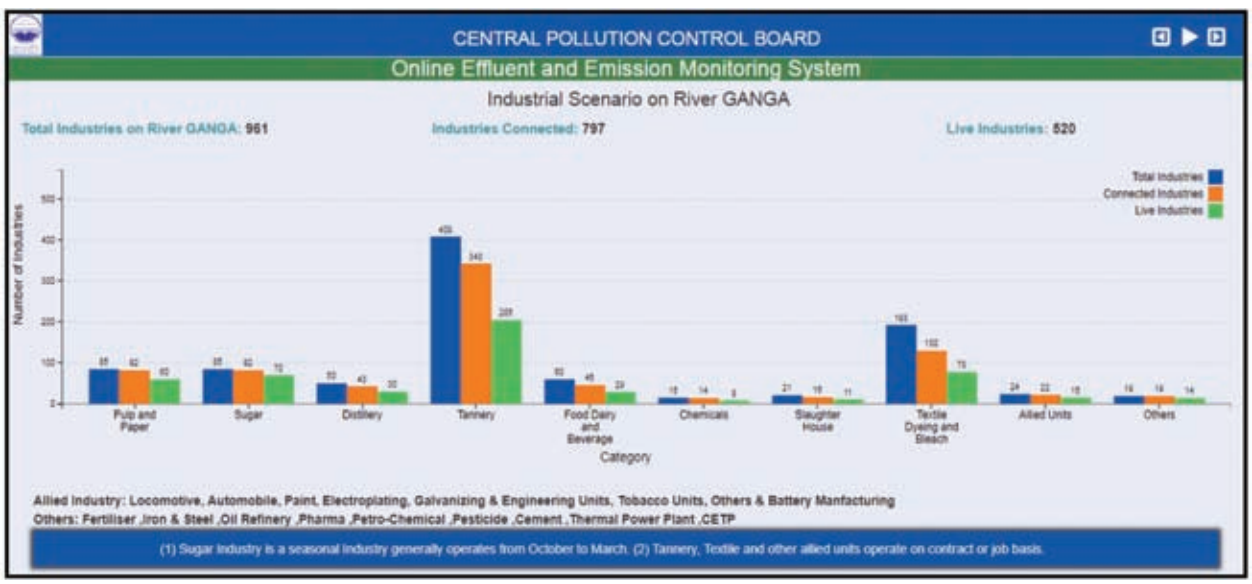
Presently 2792 industries under 17 Category industries and 798 GPI Industries have installed Emission and Effluent Monitoring Systems and data is being transmitted continuously to CPCB and various SPCBs and list is given in Table below.

- **Format of Data in the Central Portal**






## List of 17 Category & GPI Industries which are connected to CPCB Portal

| 17 Categories of Industries | | | GPI Industries | | |
|---|---|---|---|---|---|
| **Sl. No** | **Category** | **Industries connected to CPCB** | **Sl. No** | **Category** | **Industries connected to CPCB** |
| 1 | Aluminium | 12 | 1 | Sugar | 79 |
| 2 | Cement | 230 | 2 | Pulp & Paper | 81 |
| 3 | Chlor-Alkali | 35 | 3 | Distillery | 44 |
| 4 | Copper | 3 | 4 | Fertiliser | 6 |

| 17 Categories of Industries | | | GPI Industries | | |
|---|---|---|---|---|---|
| **Sl. No** | **Category** | **Industries connected to CPCB** | **Sl. No** | **Category** | **Industries connected to CPCB** |
| 5 | Distillery | 267 | 5 | Oil Refinery | 2 |
| 6 | Dye | 95 | 6 | Pharmaceuticals | 4 |
| 7 | Fertilizer | 96 | 7 | Petro-Chemical | 3 |
| 8 | Iron & Steel | 289 | 8 | Pesticide | 1 |
| 9 | Oil Refinery | 23 | 9 | Cement | - |
| 10 | Pesticides | 67 | 10 | Power | 1 |
| 11 | Petrochemicals | 30 | 11 | Tannery | 353 |
| 12 | Pharmaceuticals | 568 | 12 | Food & Beverages | 46 |
| 13 | Power | 320 | 13 | Slaughter house | 16 |
| 14 | Pulp & Paper | 233 | 14 | Textile | 129 |
| 15 | Sugar | 446 | 15 | Chemicals | 11 |
| 16 | Tannery | 75 | 16 | Allied Industry | 22 |
| 17 | Zinc | 3 | | | |
| **Total** | | 2792 | | Total | 798 |

## Actions taken in compliance to Hon'ble Supreme Court and NGT Orders: -

- **Supreme Court of India related matters: -**

**Original Suit No. 02/2015 (River Cauvery Inter-State issue) in the matter of State of Tamil Nadu Vs State of Karnataka: -**

Final round of water quality of river Cauvery at interstate locations (between Tamil Nadu and Karnataka) were monitoring carried out and monitoring report submitted to Hon'ble Supreme Court for consideration.

- **National Green Tribunal related matters: -**

Hon'ble NGT has constituted Monitoring Committees to examine and to suggest action plans for restoration of river pollution related to (i) River Hindon; (ii) River Aami; (iii) River Sutlej; (iv)Ghaggar; and (v) River Yamuna.

**NGT Original Application No. 231 of 2014: -** Joint Monitoring of river Hindon, ground water, drains out falling in river Hindon and joint Inspections of 316 industries in seven districts of Uttar Pradesh in the catchment of river Hindon were carried out in compliance to the Hon'ble NGT order dated 16.01.2018. Based on the assessment made, a consolidated report has been filed before the Hon'ble NGT in June 2018 which issued orders on July 12, 2018 and August 13, 2018.

**NGT OA No. 101 of 2014 (Filed by Sobha Singh Vs State of Punjab and Ors): -** Hon'ble NGT vide order dated 24.07.2018 has constituted a 'Monitoring Committee' comprising of Mr Balbir Singh Seechewal; representative of RSPCB, Member PPCB, representatives

of Urban Development & Housing, Govt. of Punjab. CPCB is the 'Nodal Agency' in this matter. The Monitoring Committee carried out intensive survey and monitoring of sources of pollution in River Sutlej & Beas, finalized its report and submitted its recommendations to Hon'ble NGT on 30.01.2019. Matter was heard on 28.02.2019 and passed order. Report of Monitoring Committee also uploaded in CPCB website under river pollution/NGT court cases i.e. http://cpcb.nic.in/NGTMC/FINAL-REPORT-SHOBHA-SINGH-916of2018.pdf.

**NGT OA No. 138 of 2016 and 139 of 2016 in the matter of Stench Grips Mansa's Sacred Ghaggar River (Suo-Motu Case) And Yogender Kumar:** Hon'ble NGT (PB), New Delhi in O.A No 138 of 2016 and O.A No 139 of 2016 passed order on August 07, 2018 constituting an 'Executing Committee' under the Chairmanship of Justice Pritam Pal, Former Judge Punjab & Haryana High Court for ensuring compliance to the orders issued by the Hon'ble National Green Tribunal. The Executing Committee so far held seven meetings with the concerned Departments, reviewing the actions taken by the respective Departments of Haryana, Punjab & HP State as well as Chandigarh UT for ensuring compliance to the Hon'ble NGT order dated 07.08.2018. Afore-said committee has submitted its findings/ recommendations on 28.01.2019 and 28.02.2019 before the Hon'ble NGT for consideration with respect to control of Pollution in River Ghaggar. Hon'ble NGT considered the report and passed order on 11.04.2019.

- **Monitoring to comply Hon'ble NGT directions & special Monitoring:**

CPCB has carried out source emission monitoring, Ambient Air Quality monitoring to comply Hon'ble NGT directions, Compliance verifications, VIP reference and to address the public complaint. The details of the monitoring during the year 2018-19 is as follows.

### 1. Source Emission Monitoring:

| S. No. | Type of Industry | No. of inspection/ Monitoring |
|---|---|---|
| 1. | **Waste to Energy Plants(3 Units)**<br>1. M/s. Timarpur Okhla Waste to Energy Plant, Okhla, Delhi<br>2. M/s. IL & FS Waste to Energy Plant, Gazipur, Delhi<br>3. M/s. Ramky Waste to Energy Plant, Bawana, Delhi | 09 |
| 2. | **Paper Industry**<br>1. M/s Sandeep papers, Noida, Sector-6.<br>2. M/s Asoka Papers &Pulp(P) Ltd, Ghaziabad | 03 |
| 3. | **Thermal Power Plants in NCR-Delhi**<br>M/s NTPC, Dadri, U.P.<br>Indira Gandhi Thermal Power Plant, Jhajjar, Haryana<br>M/s CLP India M.G.T.P. Plant, Jhajjar, Haryana<br>M/s Panipat TPS, Panipat | 05 |
| 4. | **Chemical Industry**<br>M/s Carbon black Industries, Gaziabad, UP state.<br>M/s Gulshan Polyols Ltd, Muzaffar nagar. UP state<br>M/s Kansai Nerolac coated Ispat Ltd, Rewari, Haryana<br>M/s Asian colour Ltd, Rewari. | 04 |
| 5. | **Cement Industry**<br>M/s Ambuja cement, Ropar, Punjab state | 02 |

| | | |
|---|---|---|
| 6. | **Glass & Ceramic Industry**<br>1. M/s Hindustan National Glass & Industries Ltd. Bahadurgarh. Haryana state.<br>2. M/s Saint gobain India (P) Ltd. Bhiwadi, Rajastan<br>3. M/s Super Ceramics (P) Ltd, Faridabad | 02 |
| 7. | **Brick kiln Unit**<br>1. M/s Vaishnov brick Kiln, Baghpat, U.P.<br>2. M/s Viswass Intt Udyog, Ganganagar, Rajastan state<br>3. M/s sh.Shyam Intt.Udyog<br>4. M/s Sardar Intt Udyog (P) Ltd<br>5. M/s Arush bhatti brick field, Greater Noida<br>6. M/s Harsh brick field, Gaziabad<br>7. M/s Lakshya Brick, Alwar,Rajastan<br>8. M/s AnilKumar & sons (TATA) bricks, Alwar, Rajastan | 08 |
| 8. | **Textile Unit**<br>M/s Amko exports(P) Ltd, Bhulandsakar, UP state<br>M/s Skylark dyeing unit, Greater Noida<br>M/s Samtex desinz, Noida<br>M/s Bliss impex, Gurgaon<br>M/s Flocksur India (P) Ltd | 05 |

## 2. Ambient Air Quality Monitoring:

| S. No. | Name of The Location | No. of inspection/ Monitoring |
|---|---|---|
| 1. | **Waste to Energy Plants(3 Units)**<br>Three Nos of Waste to Energy Plants comes under Delhi and each unit two locations have been covered. | 18 |
| 2. | M/s Ambuja cement, Ropar, Punjab state | 09 |
| 3. | 1.Khori Railway station, Rewari, Haryana<br>2.Loading and Unloading of cement (NGT case), Khori station | 05 |
| 4. | 3 locations in Hon`ble Supreme Court | 09 |
| 5. | M/s Ambuja cement, Ropar, Punjab state | 06 |

## 3. Fugitive Emission Monitoring:

| S. No. | Type of Industry | No. of inspection/ Monitoring |
|---|---|---|
| 1. | Stone Crusher Unit at M/s Tirupathi Balaji Minerals Ltd, Saharanpur, Behat. UP State | 2 |

## 4. Noise Monitoring:

| S. No. | Name of the location | No. of inspection/ Monitoring |
|---|---|---|
| 1. | M/s Kansai Nerolac coated Ispat Ltd, Rewari, Haryana | 02 |
| 2. | M/s Asian colour Ltd, Rewari. | 02 |
| 3. | M/s Ambuja cement, Ropar, Punjab state | 04 |

## 5. Special monitoring in Supreme Court :

To comply the direction of Hon'ble Supreme Court, a team of CPCB has visited to Supreme Court of India and the following three locations were identified for carry out Ambient Air quality monitoring and Noise monitoring.

1. Central lawn area Supreme Court
2. Back yard of Supreme Court and
3. Mathura Road (G Gate).

**AAQM in the premises of Supreme Court**

**Ambient Noise in Central lawn of Supreme Court**

# CHAPTER XII

## FINANCE AND ACCOUNT

NANGIA & CO LLP
CHARTERED ACCOUNTANTS

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Noida-201304
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**INDEPENDENT AUDITOR'S REPORT**

**To the Members of Central Pollution Control Board, Ministry of Environment, Forests & Climate Change, Government of India- Delhi**

**Report on the Audit of the Financial Statements**

**Qualified Opinion**

1. We have audited the accompanying financial statements of **Central Pollution Control Board, Ministry of Environment, Forests & Climate Change, Government of India** ("the Board"), which comprise of the Balance Sheet as at 31 March, 2019, the Income & Expenditure Account and Receipt & Payment Account of the Board for the year ended and notes to financial statements, including a summary of significant accounting policies and other explanatory information.

2. In our opinion and to the best of our information and according to the explanations given to us, except for the effect of the matter described in basis for qualified opinion paragraph, the Balance Sheet, Income & Expenditure Account and Receipt & Payment read together with the accounting policies and notes to accounts thereon, give the information so required and give a true and fair view in conformity with the accounting principles generally accepted in India:

   i. In the case of Balance Sheet of the state of Affairs of the Board as at 31 March 2019;

   ii. In the case of Income & Expenditure Account of the excess of Income over Expenditure for the year ended on that date; and

   iii. In the case of Receipt & Payment Account of the Receipts & Payments for the year ended on that date.

**Basis for Qualified Opinion**

3. We conducted our audit of the financial statements in accordance with the Standards on Auditing (SAs) issued by the Institute of Chartered Accountants of India. Our responsibilities under those Standards are further described in the 'Auditor's Responsibilities for the Audit of the Financial Statements' section of our report. We are independent of the Board in accordance with the 'Code of Ethics' issued by the Institute of Chartered Accountants of India (ICAI) together with the ethical requirements that are relevant to our audit of the financial statements. We have fulfilled our other ethical responsibilities in accordance with these requirements and the Code of Ethics. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

   We further draw attention to the following:

   i. Grants for capital assets received as grant in aid has been taken in Income & Expenditure account on receipt basis rather than recognizing it in Income & expenditure account over useful life of assets which is not in accordance with the Accounting Standard 12 (AS-12).

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ii. Depreciation is charged on assets on straight line method as per rates prescribed by Income Tax Act, 1961. Depreciation has been charged on closing gross block irrespective of date of purchase/ sale of assets. Furthermore, depreciation computation is not consistent across different Regional Directorates. This is not in accordance with Accounting Standard 10 (AS-10) and has resulted in depreciation being undercharged/overcharged the effect of which is not ascertainable at this stage.

iii. Note number 26.4 and 26.5 of schedule 26 as regards advances/recoverable aggregating to Rs. 1,356,396,770 and payables/ liabilities aggregating to Rs. 17,471,698 (including balances related to sponsored/earmarked projects) are subject to reconciliation/confirmation. These balances are subject to reconciliation/confirmation with respective parties as said accounts have not been reconciled and we are not aware if any adjustment is required to these accounts as at the Balance Sheet date.

iv. The value of closing inventory amounting to Rs. 15,384,299 has been considered as certified by the management and we were not provided with any documents in relation to movement of inventory during the year. Consequently, we are unable to determine whether material adjustments are required to the aforesaid reported amount.

v. Note 26.7 of schedule 26 as regards liability on account of Leave Travel Concession has neither been ascertained nor provided and in absence of adequate information, we are unable to determine the value of provision in respect to liability on account of Leave Travel Concession.

vi. Note number 26.8(b) of schedule 26 as regards capital work in progress includes a sum of Rs. 2,010,655 being advance paid to suppliers (Delhi Zone) in financial year other than the current financial year, which is being carried forward. Necessary adjustment entries will be passed once the supporting details including details of installation etc. are approved at the appropriate level.

vii. As per the provisions of Section 51 of Central Goods and Services Tax Act, 2017 ('GST Act') with effect from 1st October, 2018, the Head Office and the Regional Directorates of the Board are required to obtain registration and deduct and deposit TDS @2% under the GST Act in respect to taxable goods or services or both, where the total value of such supply, under a contract, exceeds Rs. 250,000. However, registrations are not obtained by the Regional Directorate of Vadodara, Shillong and Kolkata as at reporting date. Further there were delays in obtaining registration for the Regional Directorate of Bangalore Regional Directorate. Accordingly, the Board is in non-compliance under GST Act and penal consequences for non-compliance cannot be ascertained as at the balance sheet date.

viii. The bank balances and fixed deposit balances of the Projects, Head Office and Regional Directorates are subject to receipt of independent confirmations from banks on those balances.

The consequential impact of all the matters specified above on the financial statement could not be ascertained at this stage.

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**Emphasis of Matter**

4. We draw attention to the following matters:

i. Note number 26.7 of schedule 26 as regards the Board has created Contributory Provident Fund under the guidelines called The Central Board for the Prevention & Control of Water Pollution Employee's contributory Provident Fund since 1977-78 and the employee's contribution is deducted from the salary of the employees and transferred to CPF Fund. The accounts of CPF Fund are audited up to 31 March 2007 only. The shortfall in PF liability to be borne by the Board, if any, that has not been ascertained.

ii. National Ganga River Basin Authority (NGRBA) being a separate project governed under National Mission for Clean Ganga Scheme, has not obtained separate PAN, TAN and GSTIN and all the statutory returns in relation to this project are being filed with the returns of the Head office, Lucknow and Kolkata Regional Directorates to the extent of operations at these particular locations.

iii. The internal control system of the Board needs to be significantly strengthened to make it commensurate with the size and nature of activities of the Board, particularly with respect to monitoring/adjustment of advances given for various expenses including advances for earmarked/sponsored projects and obtaining utilization certificates, maintenance of fixed asset register, booking of expense invoices based on invoice receipt basis, provisioning for expenses etc.

iv. Note number 26.11(e) of schedule 26 which indicates that there are few sponsored projects that are either closed or non-operating. Funds amounting to Rs. 62,788,002 are lying idle in respective project's bank accounts.

v. Note number 26.11(f) of schedule 26 which indicates that as per the terms and conditions of project sanction agreement, the unspent funds at closure of the project are required to be transferred directly from the account where the funds are granted. The balance funds lying at the DTS project amounting to Rs. 539,784 was transferred during the year by the Regional Directorate of Bangalore to their account. However, the regional directorate at Bangalore has parked these funds under a separate fixed deposit and these funds are refundable to the concerned agencies.

vi. Note number 26.8(a) of schedule 26 as regards the fixed asset register has not been properly maintained at the Head office, its Regional Directorates, with respect to depreciation charged, location and identification number. Further as explained to us by the management, the physical verification of the assets of the Board is carried out in the phased manner as per the program of verification. Accordingly, certain assets have been verified during the year and the obsolete/unused/lost items will be adjusted once the reconciliation process is complete.

Our opinion is not qualified in respect of the above matters.

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**Responsibilities of management for the Financial Statements**

5. Management of the Board is responsible for the preparation of these Financial Statements in accordance with the accounting principles accepted in India and in accordance with 'Form of Financial Statement for the Central Autonomous Bodies' as per the directions of Ministry of Environment and Forest, Govt. of India vide their letter no. - G25012/1/2010CPW dated 10.02.10 as circulated by Comptroller General of Accounts, Ministry of Finance.

   This responsibility also includes maintenance of adequate accounting records for safeguarding the assets of the Board and for preventing and detecting frauds and other irregularities; selection and application of appropriate accounting policies; making judgements and estimates that are reasonable and prudent; and design, implementation and maintenance of adequate internal financial controls, that were operating effectively for ensuring the accuracy and completeness of the accounting records, relevant to the preparation and presentation of the financial statements that give a true and fair view of the financial position, financial performance and receipts & payments and are free from material misstatement, whether due to fraud or error.

**Auditor's Responsibilities for the Audit of the Financial Statements**

6. Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance but is not a guarantee that an audit conducted in accordance with SAs will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

   As part of an audit in accordance with SAs, we exercise professional judgment and maintain professional skepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.

- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on whether the Board has in place an adequate internal financial controls system over financial reporting and the operating effectiveness of such controls.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by the management.

- Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Board's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's

report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Board to cease to continue as a going concern.

- Evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

We also provide those charged with governance with a statement that we have complied with relevant ethical requirements regarding independence, and to communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.

**Other Matter**

7. The comparative financial information of the Board for the year ended March 31; 2018 included in these financial statements, are based on the previously issued statutory financial statements audited by the predecessor auditor whose report for the year ended March 31, 2018 dated December 06, 2018 expressed a qualified opinion on those financial statements.

For **Nangia & Co. LLP**
**Chartered Accountants**
**FRN# 002391C/N500069**


**Vikas Gupta**
F.C.A Partner
Membership # 076879
**UDIN:**19076879AAAAWH4102

Signed at New Delhi on 19/11/2019

# CENTRAL POLLUTION CONTROL BOARD , DELHI-110032

## BALANCE SHEET AS AT 31ST MARCH 2019

| CORPUS/CAPITAL FUND AND LIABILITIES | SCHD. | CURRENT YEAR | PREVIOUS YEAR |
|---|---|---|---|
| | | | |
| CORPUS/CAPITAL FUND | 1 | 6,67,71,198 | 1,53,07,426 |
| RESERVE AND SURPLUS | 2 | - | - |
| EARMARKED/ ENDOWMENT FUND | 3 | 4,95,47,22,137 | 2,17,65,84,710 |
| SECURED LOANS AND BORROWINGS | 4 | - | - |
| UNSECURED LOANS AND BORROWINGS | 5 | - | - |
| DEFERRED CREDIT LIABILITIES | 6 | - | - |
| CURRENT LIABILITIES AND PROVISIONS | 7 | 92,24,31,719 | 62,68,14,872 |
| | | | |
| TOTAL | | 5,94,39,25,054 | 2,81,87,07,008 |
| | | | |
| ASSETS | | | |
| | | | |
| FIXED ASSETS | 8 | 6,53,43,449 | 7,34,91,496 |
| INVESTMENTS FROM EARMARKED/ENDOWMENT FUNDS | 9 | 5,41,263 | - |
| INVESTMENTS-OTHERS | 10 | - | - |
| CURRENT ASSETS, LOANS, ADVANCES ETC | 11 | 5,87,80,40,342 | 2,74,52,15,512 |
| MISCELLANEOUS EXPENDITURE | | - | - |
| (to the extent not written off or adjusted) | | | |
| | | | |
| TOTAL | | 5,94,39,25,054 | 2,81,87,07,008 |

Schedules 1 to 26 forming part of accounts are annexed

As per our report of even date

For Nangia & Co. LLP
Chartered Accountants
Firm Reg. No. 002391C/N500069

(Vikas Gupta )
M.NO. 076879
Partner

Signed at New Delhi on 19/11/2019

For Central Pollution Control Board

(S. P. Singh Parihar, IAS)
Chairman

(Prashant Gargava)
Member Secretary

(Virendra Bansal)
Accounts Officer

(Diganta Kalita)
Assistant Accounts Officer

# CENTRAL POLLUTION CONTROL BOARD

## INCOME AND EXPENDITURE ACCOUNT FOR THE YEAR ENDED 31ST MARCH 2019

| INCOME | SCHD. | CURRENT YEAR | PREVIOUS YEAR |
|---|---|---|---|
| | | | |
| INCOME FROM SALES/ SERVICES | 12 | - | - |
| GRANTS/SUBSIDIES | 13 | 1,14,42,00,000 | 1,18,80,46,164 |
| FEES/ SUBSCRIPTIONS | 14 | - | - |
| INCOME FROM INVESTMENTS (Income on investments from earmarked/endowment funds transferred to Funds) | 15 | - | - |
| INCOME FROM ROYALTY, PUBLICATIONS ETC. | 16 | 63,500 | 54,410 |
| INTEREST EARNED | 17 | 1,31,87,754 | 1,11,32,175 |
| OTHER INCOME | 18 | 25,70,045 | 20,42,698 |
| INCREASE/ DECREASE IN STOCK OF Consumables, Stores/ Spares | 19 | 41,91,806 | 11,08,359 |
| | | | |
| TOTAL(A) | | 1,16,42,13,105 | 1,20,23,83,806 |
| EXPENDITURE | | | |
| ESTABLISHMENT EXPENSES | 20 | 67,70,44,765 | 71,10,31,928 |
| OTHER ADMINISTRATIVE EXPENSES ETC | 21 | 15,51,31,509 | 15,86,79,599 |
| EXPENDITURE ON GRANTS, SUBSIDIES ETC | 22 | - | - |
| INTEREST | 23 | 22,504 | 20,191 |
| MONITORING EXPENSES | 24 | 24,86,95,446 | 28,58,97,826 |
| DEPRECIATION | 8 | 2,81,30,506 | 4,02,42,241 |
| | | | |
| TOTAL(B) | | 1,10,90,24,730 | 1,19,58,71,785 |
| | | | |
| BALANCE BEING EXCESS OF INCOME OVER EXPENDITURE (A-B) | | 5,51,88,375 | 65,12,021 |
| TRANSFERRED TO SPECIAL RESERVE | | - | - |
| TRANSFERRED TO /FROM GENERAL RESERVE | | - | - |
| PRIOR PERIOD EXPS. | | 37,24,603 | 67,629 |
| BALANCE BEING SURPLUS/ DEFICIT CARRIED TO CORPUS / | | - | - |
| | | | |
| CAPITAL FUND | | 5,14,63,772 | 64,44,392 |

Schedules 1 to 26 forming part of accounts are annexed

As per our report of even date

For Nangia & Co. LLP
Chartered Accountants
Firm Reg. No. 002391C/N500069

(Vikas Gupta )
M.NO. 076879
Partner

Signed at New Delhi on 19/11/2019

For Central Pollution Control Board

(S. P. Singh Parihar, IAS)
Chairman

(Prashant Gargava)
Member Secretary

(Virendra Bansal)
Accounts Officer

(Diganta Kalita)
Assistant Accounts Officer

# CENTRAL POLLUTION CONTROL BOARD , DELHI-110032

## SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31ST MARCH 2019

| SCHEDULE 1 - CORPUS / CAPITAL FUND | CURRENT YEAR | | PREVIOUS YEAR | |
|---|---|---|---|---|
| | | | | |
| BALANCE AS AT BEGINNIG OF THE YEAR | 1,53,07,426 | | 88,63,034 | |
| Less:- DUE TO RECTIFICATION OF FIXED ASSETS | | | - | |
| LESS : REFUND OF CAPITAL(Adjustment) | - | | - | |
| Add:- OPENING BALANCE OF INCOME AND EXPENDITURE | | | | |
| Add/LESS:- EXCESS OF INCOME OVER EXPENDITURE/ EXCESS OF EXPENDITURE OVER INCOME | 5,14,63,772 | 6,67,71,198 | 64,44,392 | 1,53,07,426 |
| | | | | |
| BALANCE AS AT YEAR END | | 6,67,71,198 | | 1,53,07,426 |

| SCHEDULE 2 - RESERVE & SURPLUS | CURRENT YEAR | | PREVIOUS YEAR | |
|---|---|---|---|---|
| | | | | |
| 1. CAPITAL RESERVE | | - | | |
| AS PER LAST ACCOUNT | - | - | - | - |
| ADDITION DURING THE YEAR | - | - | - | - |
| Less:- DEDUCTION DURING THE YEAR | - | - | - | - |
| 2. REVALUATION RESERVE | | - | | |
| AS PER LAST ACCOUNT | - | - | - | - |
| ADDITION DURING THE YEAR | - | - | - | - |
| Less:- DEDUCTION DURING THE YEAR | - | - | - | - |
| 3. SPECIAL RESERVE | | - | | |
| AS PER LAST ACCOUNT | - | - | - | - |
| ADDITION DURING THE YEAR | - | - | - | - |
| Less:- DEDUCTION DURING THE YEAR | - | - | - | - |
| 4. GENERAL RESERVE | | - | | |
| AS PER LAST ACCOUNT | - | - | - | - |
| ADDITION DURING THE YEAR | - | - | - | - |
| Less:- DEDUCTION DURING THE YEAR | - | - | - | - |
| | | | | |

# CENTRAL POLLUTION CONTROL BOARD , DELHI-110032

## SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31ST MARCH, 2019

| SCHEDULE 3 - EARMARKED / ENDOWMENT FUNDS | FUND WISE BREAKUP | | | | TOTAL | |
|---|---|---|---|---|---|---|
| | SPONSORED PROJECTS | FUND XX | FUND YY | FUND ZZ | CUURENT YEAR | PREVIOUS YEAR |
| A) OPENING BALANCE OF THE FUND | 2,17,65,84,710 | - | - | - | 2,17,65,84,710 | 1,16,89,77,774 |
| Add : Prior Period adjustment | 19,219 | - | - | - | 19,219 | - |
| B) ADDITION TO THE FUNDS | | | | | | |
| I. DONATION / GRANTS ( NET OF REFUND) | 3,44,86,120 | - | - | - | 3,44,86,120 | 54,85,38,664 |
| II. INCOME FROM INVESTMENTS MADE ON ACCOUNT OF FUNDS | 22,78,89,970 | - | - | - | 22,78,89,970 | 6,99,47,117 |
| III. OTHER ADDITIONS | 2,70,33,71,965 | - | - | - | 2,70,33,71,965 | 84,48,14,250 |
| (Bank guarantee, EPC, NGT 25, NGT 75) | | | | | - | - |
| TOTAL (A+B) | 5,14,23,51,984 | - | - | - | 5,14,23,51,984 | 2,63,22,77,805 |
| C) UTILISATION / EXPENDITURE TOWARDS OBJECTIVES OF FUND | - | - | - | - | - | - |
| I. CAPITAL EXPENDITURE | - | - | - | - | - | - |
| - FIXED ASSETS (Including Prior Period Adjustment) | - | - | - | - | - | 48,37,617 |
| - OTHERS | - | - | - | - | - | - |
| TOTAL | - | - | - | - | - | 48,37,617 |
| II. REVENUE EXPENDITURE | | | | | | |
| - SALARIES, WAGES AND ALLOWANCES ETC. | - | - | - | - | - | 3,76,461 |
| - RENT | - | - | - | - | - | - |
| - OTHER ADMINSTRATIVE EXPENSES | 18,76,29,847 | - | - | - | 18,76,29,847 | 44,98,82,728 |
| TOTAL | 18,76,29,847 | - | - | - | 18,76,29,847 | 45,02,59,189 |
| TOTA (C) | 18,76,29,847 | - | - | - | 18,76,29,847 | 45,50,96,806 |
| D) Refund to MoEF | - | - | - | - | - | 5,96,289 |
| NET BALANCE AS AT THE YEAR END (A+B-C-D) | 4,95,47,22,137 | - | - | - | 4,95,47,22,137 | 2,17,65,84,710 |

# CENTRAL POLLUTION CONTROL BOARD , DELHI-110032

## SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31ST MARCH, 2019

| SCHEDULE 4 -SECURED LOANS AND BORROWINGS | CURRENT YEAR | | PREVIOUS YEAR | |
|---|---|---|---|---|
| 1.CENTRAL GOVERNMENT | | - | | - |
| 2.STATE GOVERNMENT (Specify) | | - | | - |
| 3.FINANCIAL INSTITUTION | | | | |
| a) Term Loans | - | | - | |
| b) Interest accrued and due | - | - | - | - |
| 4.BANKS: | | | | |
| a) Term Loans | | | | |
| -Interest accrued and due | - | | - | |
| b) Other Loans (specify) | | | | |
| -Interest accrued and due | - | - | - | - |
| 5.OTHER INSTITUTION AND AGENCIES | | - | | - |
| 6.DEBENTURES AND BONDS | | - | | - |
| 7.OTHERS (Specify) | | - | | - |
| YOTAL | | - | | - |

# CENTRAL POLLUTION CONTROL BOARD , DELHI-110032

## SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31ST MARCH, 2019

| SCHEDULE 5 -UNSECURED LOANS AND BORROWINGS | CURRENT YEAR | | PREVIOUS YEAR | |
|---|---|---|---|---|
| 1.CENTRAL GOVERNMENT | | - | | - |
| 2.STATE GOVERNMENT (Specify) | | - | | - |
| 3.FINANCIAL INSTITUTION | | - | | - |
| 4.BANKS: | | | | |
| a) Term Loans | - | | - | |
| b) Other Loans (specify) | - | - | - | - |
| 5.OTHER INSTITUTION AND AGENCIES | - | - | - | - |
| 6.DEBENTURES AND BONDS | | - | | - |
| 7. FIXED DEPOSITS | | - | | - |
| 8.OTHERS (Specify) | | - | | - |
| TOTAL | - | - | | - |

| SCHEDULE 6 -DEFERRED CREDIT LIABILITIES | | | CURRENT YEAR | PREVIOUS YEAR |
|---|---|---|---|---|
| a) Acceptence secured by hypothecation of capital equipment and other assets | | | - | - |
| b) Others | | | - | - |
| TOTAL | | | - | - |

# CENTRAL POLLUTION CONTROL BOARD , DELHI-110032

## SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31ST MARCH, 2019

| SCHEDULE 7 - CURRENT LIABILITIES AND PROVISIONS | CURRENT YEAR | | PREVIOUS YEAR | |
|---|---|---|---|---|
| | | | | |
| A. CURRENT LIABILITIES | | | | |
| 1. Acceptances | | - | | - |
| 2. Sundry Creditors: | | | | |
| a) For goods | - | | - | |
| b) Others | 1,14,97,338 | 1,14,97,338 | 2,39,93,484 | 2,39,93,484 |
| 3. Advances Received | | 42,48,862 | | 28,88,227 |
| 4. Interest accrued but not due on: | | | | |
| a) Secured Loans/borrowings | - | | - | |
| b) Unsecured Loans/borrowings | - | - | - | - |
| 5. Statutory Liabilities: | | | | |
| a) Overdue | - | - | - | |
| b) Others | 4,59,911 | 4,59,911 | 4,18,179 | 4,18,179 |
| 6. Other current Liabilities | | 29,82,99,884 | | 3,04,27,902 |
| | | | | |
| TOTAL (A) | | 31,45,05,995 | | 5,73,09,613 |
| | | | | |
| B. PROVISIONS | | | | |
| 1. For Taxation | | - | | - |
| 2. Gratuity | | 35,36,63,339 | | 32,90,69,206 |
| 3. Superannuation/Pension | | - | | - |
| 4. Accumulated Leave Encashment | | 25,42,62,385 | | 24,04,36,053 |
| 5. Trade Warranties/Claims | | - | | - |
| 6. Others (Specify) | | - | | - |
| | | | | |
| TOTAL (B) | | 60,79,25,724 | | 56,95,05,259 |
| | | | | |
| TOTAL (A+B) | | 92,24,31,719 | | 62,68,14,872 |

# CENTRAL POLLUTION CONTROL BOARD , DELHI-110032

## SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31ST MARCH, 2019

| SCHEDULE 8 -FIXED ASSETS | GROSS BLOCK | | | | AMORTISATION/DEPRECIATION | | | | | NET BLOCK | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Cost/valuation as at beginning of the Year(original | Addition during the year | Deductions/Adjustments during the year | Cost/valuation at the year end(origini cost) | As at the beginning of the Year | Prior Period Dep. | During the Year | On Deductions during the Year | At the end of the year | As at the current Year -end | As at the Previous Year -end |
| FIXED ASSETS: | | | | | | | | | | | |
| LAND: | | | | | | | | | | | |
| a) Freehold | - | - | - | - | - | | - | - | - | - | - |
| b) Leasehold | 1,25,05,904 | - | - | 1,25,05,904 | 15,25,638 | - | 95,530 | - | 16,21,168 | 1,08,84,736 | 1,09,80,266 |
| BUILDINGS: | | | | | | | | | | | |
| a) On Freehold Land | - | - | - | - | - | | - | - | - | - | - |
| b) On Leasehold Land | 11,87,78,416 | 2,67,630 | - | 11,90,46,046 | 9,95,12,249 | - | 73,78,021 | - | 10,68,90,270 | 1,21,55,776 | 1,92,66,167 |
| c) Ownership Flats/Premises | - | - | - | - | - | | - | - | - | - | - |
| d) Superstructures on Land not belonging to the entity | - | - | - | - | - | | - | - | - | - | - |
| PLANT, MACHINERY & EQUIPMENT | 45,82,92,954 | 1,30,63,150 | 21,89,180 | 46,91,66,924 | 43,53,78,307 | - | 1,19,82,969 | 20,94,824 | 44,52,66,452 | 2,39,93,634 | 2,29,14,647 |
| VEHICLES | 2,23,82,322 | 2,70,511 | 10,13,495 | 2,16,39,338 | 1,24,77,306 | - | 28,22,600 | 10,13,049 | 1,42,86,857 | 73,52,481 | 99,05,016 |
| FURNITURE, FIXTURES, | 2,23,28,122 | 23,50,980 | 55,207 | 2,46,23,895 | 1,61,17,463 | - | 20,45,153 | - | 1,81,62,616 | 64,97,581 | 62,10,659 |
| OFFICE EQUIPMENT | - | - | - | - | - | | - | - | - | - | - |
| COMPUTER/PERIPHERALS | 3,56,33,462 | 39,50,508 | 1,62,732 | 3,94,21,238 | 3,37,62,952 | | 36,87,225 | 1,62,732 | 3,72,87,445 | 21,33,793 | 18,70,510 |
| ELECTRIC INSTALLATIONS | - | - | - | - | - | | - | - | - | - | - |
| LIBRARY BOOKS | 15,64,729 | 80,225 | - | 16,44,954 | 14,77,708 | - | 1,19,008 | - | 15,96,716 | 48,238 | 87,021 |
| TUBEWELLS & W.SUPPLY | - | - | - | - | - | | - | - | - | - | - |
| OTHER FIXED ASSETS | - | - | - | - | - | | - | - | - | - | - |
| TOTAL OF CURRENT YEAR | 67,14,85,909 | 1,99,83,004 | 34,20,614 | 68,80,48,299 | 60,02,51,623 | - | 2,81,30,506 | 32,70,605 | 62,51,11,524 | 6,30,66,239 | 7,12,34,286 |
| CAPITAL WORK-IN PROGRESS | 22,57,210 | 20,000 | - | 22,77,210 | - | - | - | - | - | 22,77,210 | 22,57,210 |
| TOTAL | 67,37,43,119 | 2,00,03,004 | 34,20,614 | 69,03,25,509 | 60,02,51,623 | - | 2,81,30,506 | 32,70,605 | 62,51,11,524 | 6,53,43,449 | 7,34,91,496 |

# CENTRAL POLLUTION CONTROL BOARD

## SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31ST MARCH, 2019

| SCHEDULE 9 -INVESTMENTS FROM EARMARKED/ ENDOWMENT FUNDS | CURRENT YEAR | | PREVIOUS YEAR | |
|---|---|---|---|---|
| 1. IN GOVERNMENT SECURITIES | | - | | - |
| 2. OTHER APPROVED SECURITIES | | - | | - |
| 3. SHARES | | - | | - |
| 4. DEBENTURES AND NONDS | | - | | - |
| 5. SUBSIDIARIES AND JOINT VENTURES | | - | | - |
| 6. OTHERS (Deposit) | | 5,41,263.00 | | - |
| TOTAL | | 5,41,263.00 | | - |

| SCHEDULE-10 INVESTMENTS OTHERS | CURRENT YEAR | | PREVIOUS YEAR | |
|---|---|---|---|---|
| 1. IN GOVERNMENT SECURITIES | | - | | - |
| 2. OTHER APPROVED SECURITIES | | - | | - |
| 3. SHARES | | - | | - |
| 4. DEBENTURES AND NONDS | | - | | - |
| 5. SUBSIDIARIES AND JOINT VENTURES | | - | | - |
| 6. OTEHRS(TO BE SPECIFIED) | | - | | - |
| TOTAL | | - | | - |

# CENTRAL POLLUTION CONTROL BOARD

## SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31ST MARCH, 2019

| SCHEDULE 11- CURRENT ASSETS, LOANS, AND ADVANCES | CURRENT YEAR | | PREVIOUS YEAR | |
|---|---|---|---|---|
| | | | | |
| A) CURRENT ASSETS | | | | |
| 1. INVENTORIES | | | | |
| a) Stores , Spares and Consumables | 1,53,84,299 | | 1,11,82,983 | 1,11,82,983 |
| b) Loose Tools | - | | - | |
| c) Stock-in- trade | | | - | |
| Finished Goods ( Consumables, Stores,/ Spares) | - | | | |
| Work -in- progress | - | | | |
| Raw materials | - | 1,53,84,299 | | |
| 2. SUNDRY DEBTORS | | | | |
| a) Debts outstanding for a period exceeding six months | - | | - | |
| b) Others | - | - | - | - |
| 3. Cash balances in hand | - | - | 1,09,118 | 1,09,118 |
| 4.Bank Balances | | | | |
| a)With scheduled banks | | | | |
| -On current Accounts | 16,59,46,004 | | 15,02,00,248 | |
| - On Deposits Accounts(including margine money) (Sponsored Projects) | 2,94,21,46,787 | | 3,75,43,688 | |
| - On saving Accounts (Sponsored Projects-including Flexi Fixed Deposit amount) | 1,36,69,99,631 | 4,47,50,92,421 | 1,60,23,32,519 | 1,79,00,76,455 |
| b) with non- shceduled Banks | | | | |
| -On current Accounts | - | | - | |
| - On Deposits Accounts(including margine money) | - | | - | |
| - On saving Accounts | - | - | - | - |
| 5. Post office saving Accounts | | - | | - |
| TOTAL (A) | | 4,49,04,76,721 | | 1,80,13,68,556 |

# CENTRAL POLLUTION CONTROL BOARD

## SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31ST MARCH, 2019

| SCHEDULE 11- CURRENT ASSETS, LOANS, AND ADVANCES | CURRENT YEAR | | PREVIOUS YEAR | |
|---|---|---|---|---|
| | | | | |
| B) LOANS, ADVANCES AND OTHER ASSETS | | | | |
| 1.LOANS & ADVANCES | | | | |
| a) Staff | 20,57,101 | | 20,55,181 | |
| b) other entities engaged in activities similar to that entity | - | | 2,56,71,169 | |
| c) Other (Sponsored Projects Advances) | 90,25,96,709 | 90,46,53,810 | 55,00,12,299 | 57,77,38,649 |
| 2.Advances and other amounts recoverable in cash or kind | - | | | |
| a) On capital account | - | | - | |
| b) Prepayments | 17,61,336 | | 20,16,791 | |
| c) Others | 46,25,94,711 | 46,43,56,047 | 36,17,66,474 | 36,37,83,265 |
| 3. Income Accrued | | | | |
| a) on investments from earmarked/endowment funds | - | | - | |
| b) On investments (Sponsored Projects) | 1,85,53,764 | | 23,25,042 | |
| c) On loans and advances | - | | - | |
| d) Others | - | 1,85,53,764 | - | 23,25,042 |
| 4. CLAIMS RECEIVABLE | | - | | - |
| TOTAL (B) | | 1,38,75,63,621 | | 94,38,46,956 |
| | | | | |
| TOTAL (A+B) | | 5,87,80,40,342 | | 2,74,52,15,512 |

# CENTRAL POLLUTION CONTROL BOARD

## SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31ST MARCH, 2019

| SCHEDULE 12- INCOME FROM SALES/SERVICE | CURRENT YEAR | PREVIOUS YEAR |
|---|---|---|
| | | |
| 1.INCOME FROM SALES | | |
| a) Sale of Finished goods | - | - |
| b) Sale of Raw material | - | - |
| c)Sale of Scrap | - | - |
| 2. INCOME FROM SERVICES | | |
| a) Labour and processing charges | - | - |
| b) Professional/ consultancy service | - | - |
| c) Agency commission and Brokerage | - | - |
| d) Maintenance Services (Eqipment / property) | - | - |
| e) Others (specify) | - | - |
| | | |
| TOTAL | - | - |

| SCHEDULE 13- GRANTS/ SUBSIDIES | CURRENT YEAR | PREVIOUS YEAR |
|---|---|---|
| | | |
| 1. Central Government | 1,14,42,00,000 | 1,18,80,46,164 |
| 2. Fund Transfer to ZO'S | - | - |
| 3. State Government | - | - |
| 4. Government agencies | - | - |
| 5. Institutions/ welfare Bodies | - | - |
| 6. International Organisations | - | - |
| 7. Others (specify) | - | - |
| | | |
| TOTAL | 1,14,42,00,000 | 1,18,80,46,164 |

# CENTRAL POLLUTION CONTROL BOARD

## SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31ST MARCH, 2019

| SCHEDULE 14- FEES/ SUBSCRIPTIONS | CURRENT YEAR | PREVIOUS YEAR |
|---|---|---|
| 1. Entrance fees | - | - |
| 2. Annual Fees/ Subscriptions | - | - |
| 3. Seminar/ program Fees | - | - |
| 4. Consultancy Fees | - | - |
| 5. Others | - | - |
| | | |
| TOTAL | - | - |

| SCHEDULE 15- INCOME FROM INVESTMENTS | CURRENT YEAR | PREVIOUS YEAR |
|---|---|---|
| | | |
| 1. INTEREST | | |
| A) ON GOVT. SECURITIES | - | - |
| B) OTHER BONDS/ DEBENTURES | - | - |
| 2. DIVIDENDS | | |
| A) ON SHARES | - | - |
| B) ON MUTUAL FUND SECURITIES | - | - |
| 3. RENTS | - | - |
| 4. OTHERS (SPECIFY) | - | - |
| | | |
| TRANSFERRED TO EARMARKED/ ENDOWMENT FUNDS | - | - |

| SCHEDULE 16 - INCOME FROM ROYALTY, PUBLICATIONS etc. | CURRENT YEAR | PREVIOUS YEAR |
|---|---|---|
| | | |
| 1. INCOME FROM ROYALTY | - | - |
| 2. INCOME FROM PUBLICATIONS | 63,500 | 54,410 |
| 3. OTHERS (specify) | - | - |
| | | |
| TOTAL | 63,500 | 54,410 |

# CENTRAL POLLUTION CONTROL BOARD

## SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31ST MARCH, 2019

| SCHEDULE 17 - INTEREST EARNED | CURRENT YEAR | PREVIOUS YEAR |
|---|---|---|
| | | |
| 1. ON TERM DEPOSITS | | |
| a) with scheduled Banks | 1,29,90,685 | 1,09,24,875 |
| b) with non scheduled Banks | - | - |
| c) with institution | - | - |
| d) others | - | - |
| 2. ON SAVING ACCOUNTS | - | - |
| a) with scheduled Banks | - | - |
| b) with non scheduled Banks | - | - |
| c) with institution | - | - |
| d) others | 8,297 | - |
| 3. ON LOANS | - | - |
| a) Employee/ staff - HBA | 1,88,772 | 2,07,300 |
| b) Others | - | - |
| 4. INTEREST ON DEBTORS AND OTHERS RECEIVABLES | - | - |
| | | |
| TOTAL | 1,31,87,754 | 1,11,32,175 |

| SCHEDULE 18- OTHER INCOME | CURRENT YEAR | PREVIOUS YEAR |
|---|---|---|
| | | |
| 1. PROFIT ON SALE/ DISPOSAL OF ASSETS | | |
| a) Owned assets | 4,26,072 | - |
| b) Assets acquired out of grants, or received free of cost | - | - |
| 2.EXPORT INCENTIVES REALIZED | - | - |
| 3. FEES FOR MISCELLANEOUS SERVICES | - | - |
| 4. MISCELLANEOUS INCOME | 21,43,973 | 20,42,698 |
| | | |
| TOTAL | 25,70,045 | 20,42,698 |

# CENTRAL POLLUTION CONTROL BOARD

## SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31ST MARCH, 2019

| SCHEDULE 19- INCREASE/DECREASE IN STOCK OF FINISHED GOODS & WORK-IN-PROGERESS | CURRENT YEAR | PREVIOUS YEAR |
|---|---|---|
| | | |
| A. CLOSING STOCK | | |
| - Finished Goods ( Consumables, Stores/ Spares) | 1,53,84,299 | 1,12,92,101 |
| - Work in progress | - | - |
| B. Less:- OPENING STOCK | - | - |
| - Finished Goods ( Consumables, Stores/ Spares) | 1,11,92,493 | 1,01,83,742 |
| - Work in progress | - | - |
| | | |
| NET INCREASE/ DECREASE (A-B) | 41,91,806 | 11,08,359 |
| | | |
| SCHEDULE 20- ESTABLISHMENT EXPENSES | CURRENT YEAR | CURRENT YEAR |
| | | |
| 1. SALARIES & WAGES | 54,84,86,961 | 59,00,52,807 |
| 2. ALLOWANCES AND BONUS | 2,24,44,839 | 2,14,91,156 |
| 3. CONTRIBUTION TO PROVIDENT FUND | 3,21,83,417 | 5,12,96,515 |
| 4. CONTRIBUTION TO OTHER FUND - GIS | 1,11,709 | 1,17,522 |
| 5. STAFF WELFARE EXPENSES | 37,36,814 | 41,94,956 |
| 6. EXPENSES ON EMPLOYEE RETIREMENT & TERMINAL BENEFIT | 7,00,54,835 | 4,38,53,302 |
| 7. OTHERS- WELFARE FUND | 26,190 | 25,670 |
| | | |
| TOTAL | 67,70,44,765 | 71,10,31,928 |

# CENTRAL POLLUTION CONTROL BOARD

## SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31ST MARCH, 2019

| SCHEDULE 21 - OTHER ADMINISTRATIVE EXPENSES | CURRENT YEAR | PREVIOUS YEAR |
|---|---|---|
| | | |
| ADVERTISEMENT AND PUBLICITY | 9,69,039 | 55,74,454 |
| AUDITORS REMUNERATION | 2,24,200 | 2,24,200 |
| CARTAGE AND CARIAGE INWARD | - | - |
| DISTRIBUTION EXPENSES | - | - |
| ELECTRICITY AND POWER | 2,27,89,623 | 2,15,06,103 |
| EXCISE DUTY | - | - |
| EXPENSES ON FEES | - | 3,08,141 |
| EXPENSES ON SEMINAR/WORKSHOP | 1,14,49,837 | 1,32,32,596 |
| FREIGHT AND FORWARDING EXPENSES | - | - |
| HOSPITALITY EXPENSES | 2,32,526 | 3,531 |
| INSURANCE | 21,42,121 | 14,57,578 |
| IRRECOVERABLE BALANCES WRITTEN OFF | - | - |
| LABOUR AND PROCESSING EXPENSES | - | - |
| OTHERS (specify) | 1,23,68,060 | 82,48,164 |
| PACKING CHARGES | - | - |
| POSTAGE, TELEPHONE AND COMMUNICATIONS | 68,07,215 | 64,72,316 |
| PRINTING AND STATIONARY | 46,51,710 | 51,99,926 |
| PROFESSIONAL CHARGES | 32,11,720 | 39,31,616 |
| PROVISION FOR BAD AND DOUBTFUL DEBTS | - | - |
| PURCHASES ( Consumables, Stores/ Spares) | 1,49,42,867 | 1,43,68,706 |
| RENT, RATES AND TAXES | 70,31,536 | 73,75,705 |
| REPAIR AND MAINTENANCE | 3,49,81,312 | 4,05,44,672 |
| SUBSCRIPTION EXPENSES | - | - |
| TRAVELLING AND CONVEYANCE EXPENSES | 2,28,25,474 | 2,02,33,226 |
| VEHICLE RUNNING AND MAINTENANCE | 79,83,788 | 80,60,705 |
| WATER CHARGES | 25,20,481 | 19,37,960 |
| | | |
| TOTAL | 15,51,31,509 | 15,86,79,599 |

# CENTRAL POLLUTION CONTROL BOARD

## SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31ST MARCH, 2019

| SCHEDULE 22- EXPENDITURE ON GRANTS, SUBSIDIES | CURRENT YEAR | PREVIOUS YEAR |
|---|---|---|
| | | |
| GRANTS GIVEN TO INSTITUTIONS/ ORGANISATION | - | - |
| SUBSIDIES GIVEN TO INSTITUTIONS/ ORGANISATION | - | - |
| | | |
| TOTAL | - | - |

| SCHEDULE 23- INTEREST | CURRENT YEAR | PREVIOUS YEAR |
|---|---|---|
| | | |
| ON FIXED LOANS | - | - |
| ON OTHER LOANS ( including bank charges) | 22,166 | 20,191 |
| OTHERS | 338 | - |
| | | |
| TOTAL | 22,504 | 20,191 |

| SCHEDULE 24- MONITORING EXPENSES | CURRENT YEAR | PREVIOUS YEAR |
|---|---|---|
| | | |
| AIR QUILITY MONITORING EXPENSES | 13,48,94,035 | 26,16,99,931 |
| WATER QUILITY MONITORING EXPENSES | 10,39,19,868 | 2,760 |
| ENVIRONMENT PROTECTION AND MONITORING EXP. | 98,81,543 | 2,41,95,135 |
| | | |
| TOTAL | 24,86,95,446 | 28,58,97,826 |

# CENTRAL POLLUTION CONTROL BOARD, DELHI

## RECEIPTS & PAYMENT ACCOUNT FOR THE YEAR ENDED 31ST MARCH 2019

| RECEIPTS | CURRENT YEAR | PREVIOUS YEAR | PAYMENTS | CURRENT YEAR | PREVIOUS YEAR |
|---|---|---|---|---|---|
| I. Opening Balance | | | I. Expenses | | |
| a) Cash in hand | - | - | a) Establishment Expenses | 61,87,90,957 | 67,91,93,461 |
| b) Bank Balances | - | - | b) Administrative Expenses | 15,89,43,921 | 43,58,07,407 |
| I) In current accounts | 15,02,00,248 | 25,56,23,873 | c) Prior Period Exps | 75,910 | 6,500 |
| II) In deposit accounts | 3,75,43,688 | 3,25,14,752 | II. Payments made against funds for various projects | - | - |
| III) Savings accounts | 1,60,23,32,520 | 79,32,78,738 | Project Exps | 15,84,27,183 | 45,02,59,189 |
| II. Grants Received | - | - | | | |
| a) From Government of India - Mains | 1,14,42,00,000 | 1,18,80,46,164 | III. Investments and deposits made | | |
| b) From State Government | - | - | a) Out of Earmarked/Endowment funds | 5,39,784 | - |
| c) From Government of India - Projects | 41,80,82,637 | 54,85,38,664 | b) Out of Own Funds (Investments-Others) | - | - |
| d) Others | 1,82,96,54,897 | 84,48,14,250 | | | |
| | | | IV. Expenditure on Fixed Assets &Capital Work in progress | | |
| | | | a) Purchase of Fixed Assets-Own fund | 1,97,55,953 | 1,52,73,046 |
| III. Income on Investments from | | | b) Purchase of Fixed Assets- Earmarked/Endowment funds | - | 48,37,617 |
| a) Earmarked/Endow. Funds | 10,40,59,495 | 6,99,47,117 | | | |
| b) Own Funds | - | - | V. Refund of surplus money/Loans | | |
| | | | a) To the Government of India | 2,15,64,172 | 5,96,289 |
| IV. Interest Received | | - | b) To the State Government | - | - |
| a) On Bank deposits | 31,27,595 | 1,09,24,875 | c) To other providers of funds | 27,20,224 | - |
| b) Loans. Advances etc. | 1,19,352 | 1,37,880 | d) To the Government of India - Mains | - | - |
| | | | VI. Finance Charges (Interest & Bank charges Sch 23) | 22,402 | 20,191 |
| V. Other Income (Specify) | | | | | |
| a) Income from Royalty, Publications Etc. | 69,110 | 54,410 | VII. Other Payments (Specify) | | |
| b) Other Income | 50,85,60,274 | 20,37,998 | a) Advances and other payments (Net) - Mains | 34,86,14,151 | 35,19,93,257 |
| c) Misc Income | 26,49,37,415 | | b) Advances and other payments (Net) - Projects | 26,84,68,233 | 19,23,82,319 |
| VI. Amount Borrowed | - | - | | | |
| | | | VIII. Closing Balances | | |
| VII. Any other receipts | | | a) Cash in hand | - | - |
| a) Other - Mains | 65,42,760 | 17,45,27,010 | b) Bank Balances | | |
| c) Sale of Fixed Assets | 11,59,173 | - | I) In current accounts | 16,59,46,004 | 15,02,00,248 |
| d)Advances and other payments (Net)-Mains | 24,26,149 | - | II) In deposit accounts | 2,94,21,46,787 | 3,75,43,688 |
| | | | III) In Savings account | 1,36,69,99,631 | 1,60,23,32,519 |
| TOTAL | 6,07,30,15,312 | 3,92,04,45,731 | TOTAL | 6,07,30,15,312 | 3,92,04,45,731 |

Schedules 1 to 26 forming part of accounts are annexed
As per our report of even date

For Nangia & Co. LLP
Chartered Accountants
Firm Reg. No. 002391C/N500069

(Vikas Gupta )
M.NO. 076879
Partner
Signed at New Delhi on 19/11/2019

For Central Pollution Control Board

(S. P. Singh Parihar, IAS)
Chairman

(Prashant Gargava)
Member Secretary

(Virendra Bansal)
Accounts Officer

(Diganta Kalita)
Assistant Accounts Officer

## CENTRAL POLLUTION CONTROL BOARD : DELHI - 110032

### DEPOSITS RECEIVED FOR WORKS FROM OUTSIDE BODIES (OTHER SPONSORED PROJECTS) (2018-19)

| SL. NO. | New Code | NAME OF THE PROJECT | OPENING BALANCE | RECEIVED DURING THE YEAR | | | | | | PAYMENT DURING THE YEAR | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Grant Received | Grant-Others | Income on Investment | Misc. Income | Adjuaments | Receipt Total | Expenditure | Refund to Govt. | Refund to Other Fund | Advances and other peyments | Project Advance | Total Payment (Excluding | Closing Balance |
| 1 | | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 10 = (4+5+6+7+8) | 10 | 11 | 12 | 13 | 14 | 15=(10+11+12+13+14) | 16 = (3+9-15) |
| 1 | PR01 | AGRA AAQM UP | 0 | | | | | | 0 | | | | | | 0 | 0 |
| 2 | PR02 | DOD PROJECT | 47531 | | | | | | 0 | | | | | | 0 | 47531 |
| 3 | PR03 | DTS PROJECT | 539784 | | | | | | 0 | | | | 539784 | | 539784 | 0 |
| 4 | PR04 | CAEAII | 61857 | | | 2193 | | | 2193 | 0 | | | | | 0 | 64050 |
| 5 | PR05 | CLEAN TECHNOLOGY | 4870255 | | | 254559 | | | 254559 | | | | | | 0 | 5224814 |
| 6 | PR06 | BANK GUARANTEE | 43692358 | | | 1473653 | | 0 | 1473653 | 0 | | | | | 0 | 45166011 |
| 7 | PR07 | HWMD DUMP SITE | 77195088 | | | 3687834 | | | 3687834 | 58915214 | | | | | 58915214 | 21967708 |
| 8 | PR08 | HWMD WASTE OF UCIL, Bhopal | 0 | | | | | | 0 | 0 | | | | | 0 | 0 |
| 9 | PR09 | VTT FINLAND | 38331 | | | 1359 | | | 1359 | | | | | | 0 | 39690 |
| 10 | PR10 | ENVIS PROJECT | 889750 | 7777844 | | 78937 | | 16819 | 7873600 | 1111574 | | | | 5494586 | 6606160 | 2157190 |
| 11 | PR11 | IARI PROJECT | 1308790 | 2000000 | | 54002 | | 400 | 2054402 | 1084673 | | | | 27711 | 1112384 | 2250808 |
| 12 | PR12 | ICAQIS (CESS) | 0 | | | 16108 | | | 16108 | | | | | | 0 | 16108 |
| 13 | PR13 | NSDI(DST) | 986202 | | | 22753 | | | 22753 | 169437 | 555201 | | | | 724638 | 284317 |
| 14 | PR14 | ORRISA BOARD - MOBILE LAB | 95180 | | | | | | 0 | | | | | | 0 | 95180 |
| 15 | PR15 | PARYAVARAN DARSHAN | 29809628 | | | 1486321 | | 20 | 1486341 | | | | | | 0 | 31295969 |
| 16 | PR16 | STRENGTHENING OF NAQM | 0 | | | | | | 0 | | | | | | 0 | 0 |
| 17 | PR17 | UNEP Male PROJECT | 2726348 | | | | | | 0 | 1829 | | | | | 1829 | 2724519 |
| 18 | PR18 | UNI DO PROJECT | 8319324 | | | 337760 | | | 337760 | 30 | | | | | 30 | 8657054 |
| 19 | PR19 | WORKSHOP ON BMWM | 0 | | | | | | 0 | 0 | | | | | 0 | 0 |
| 20 | PR20 | BAKARGANJ NALA PATNA | 17965 | | | 637 | | | 637 | | | | | | 0 | 18602 |
| 21 | PR21 | BUDHANALA LUDHIYANA NRCP | 80250 | | | 2846 | | | 2846 | | | | | | 0 | 83096 |
| 22 | PR22 | CRITICALLY POLLUTED AREA CESS | 239939 | | | 8510 | | | 8510 | | | | | | 0 | 248449 |
| 23 | PR23 | NAQMP CESS | 0 | | | 0 | | | 0 | 0 | | | | | 0 | 0 |
| 24 | PR24 | CPCB NNMS | 5743 | | | 205 | | | 205 | | | | | | 0 | 5948 |
| 25 | PR25 | BASELINE SERVEY OF INDUSTRIES | 3094213 | | | 125288 | | | 125288 | | | | | | 0 | 3219501 |
| 26 | PR26 | UPGRADATION OF LAB (Cess) | 13652758 | | | 1310783 | | 2000 | 1312783 | 973 | | 4650 | | 50936 | 56559 | 14908982 |

| SL. NO. | New Code | NAME OF THE PROJECT | OPENING BALANCE | RECEIVED DURING THE YEAR | | | | | | PAYMENT DURING THE YEAR | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Grant Received | Grant-Others | Income on Investments | Misc. Income | Adjusments | Receipt Total | Expenditure | Refund to Govt. | Refund to Other Fund | Advances and other payments | Project Advance | Total Payment (Excluding | Closing Balance |
| 1 | | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 = (4+5+6+7+8) | 10 | 11 | 12 | 13 | 14 | 15=(10+11+12+13+14) | 16 = (3+9-15) |
| 27 | PR27 | WQM WB INPUT COST OF STAFF | 51688681 | | | 2786026 | | 11070000 | 13856026 | 295 | | | | 43053 | 43348 | 65501359 |
| 28 | PR28 | CPCB-HWMD Waste of UCIL Pithampur | 0 | | | | | | 0 | | | | | | 0 | 0 |
| 29 | PR29 | CPCB-Hydrology Project | 11045480 | | | 405415 | | 0 | 405415 | 8375549 | | | | 3070000 | 11445549 | 5346 |
| 30 | PR30 | CPCB-NGT 25 | 488132130 | 362032345 | | 29031246 | | 850150383 | 1241213974 | 3018044 | | | 850000000 | 500000 | 853518044 | 875828060 |
| 31 | PR31 | CPCB-NGT 75 | 19940581 | | 1668446285 | 4667152 | | 248877500 | 1921990937 | | | | | 100215000 | 100215000 | 1841716518 |
| 32 | PR32 | Upgradation of Air Lab Project | 18625654 | | | 1034597 | | | 1034597 | 1519803 | | | | | 1519803 | 18140448 |
| 33 | PR33 | CPCB-PIAs | 45218866 | | | 2062031 | | 1526731 | 3588762 | 6134112 | 19618866 | | | 12034867 | 37787845 | 11019783 |
| 34 | PR34 | CPCB-SNITI | 1382944 | | | 7161 | | | 7161 | 0 | 1390105 | | | | 1390105 | 0 |
| 35 | PR35 | CPCB-CPSU PROJ | 107254200 | | | 4342841 | | | 4342841 | | | | | | 0 | 111597041 |
| 36 | PR36 | CPCB-EPC | 693092464 | | | 46480899 | 504961814 | 1000002975 | 1551445688 | 27549561 | | | 1000000000 | 89515650 | 1117065211 | 1127472941 |
| 37 | PR37 | CCBP Proj | 10969577 | | | 444170 | | | 444170 | | | | | | 0 | 11413747 |
| 38 | PR38 | AWQM in North East | 2657841 | | | 57733 | | | 57733 | | | 2715574 | | | 2715574 | 0 |
| 39 | PR39 | AQMM CESS 2017 | 2078587 | | | 193687 | 0 | 3253333 | 3447020 | | | | 3253333 | | 3253333 | 2272274 |
| 40 | PR40 | NWQMN 2017 Cess | 17909 | | | 153725 | 1792430 | | 1946155 | | | | | | 0 | 1964064 |
| 41 | PR41 | EC BY CPCB | 0 | | 80550000 | 36818 | | | 80586818 | | | | | 11070000 | 11070000 | 69516818 |
| 42 | PR42 | CPCB- AQM Strengthening of AAQMS | 0 | | 49000000 | 128877 | | | 49128877 | | | | | 48630000 | 48630000 | 498877 |
| 43 | PR43 | CPCB- AQM O&M OF NAQP | 0 | 14500000 | | | | | 14500000 | 14250666 | | | | | 14250666 | 249334 |
| 44 | PR44 | CPCB WQM NWMP | 0 | 20000000 | | | | | 20000000 | 19982833 | | | | | 19982833 | 17167 |
| 45 | PR45 | CPCB WM DUMP SITE GANJAM ODISHA | 0 | | 21136662 | 241201 | | | 21377863 | | | | | | 0 | 21377863 |
| 46 | PR46 | CPCB (AL) AIR POLLUTION SOURCES AT TAJ | 0 | 1172448 | | 685 | | | 1173133 | | | | | 1172448 | 1172448 | 685 |
| 47 | PR47 | CPCB WM DUMP SITE TALCHAR ODISHA | 0 | | 10521950 | 120071 | | | 10642021 | | | | | | 0 | 10642021 |
| 48 | PR48 | CPCB NCAP-2019 | 0 | 10600000 | | | | | 10600000 | | | | | 1600000 | 1600000 | 9000000 |
| | | TOTAL:- | 1639876208 | 418082637 | 1829654897 | 101058083 | 506754244 | 2114900161 | 4970450022 | 142114593 | 21564172 | 2720224 | 1853793117 | 273424251 | 2293616357 | 4316709873 |

Annexure - 1 to Schedule C

## CENTRAL POLLUTION CONTROL BOARD : DELHI - 110032

### Closing Balance of capital fund - Other Sponsored Projects: (2018-19)

| SL. NO. | Proj. Code | NAME OF THE PROJECT | Balance at Bank | Interest Accrued on Investments | Advances | Total | Less: Liabilities | Closing Balance of captial fund |
|---|---|---|---|---|---|---|---|---|
| 1 | | 2 | 3 | 4 | 5 | 6 = (3+4+5) | 7 | 8 = (6-7) |
| 1 | PR01 | AGRA AAQM UP | - | - | 6,000 | 6,000 | | 6,000 |
| 2 | PR02 | DOD PROJECT | 47,531 | | 1,98,294 | 2,45,825 | 4,80,000 | (2,34,176) |
| 3 | PR03 | DTS PROJECT | - | | 5,39,784 | 5,39,784 | | 5,39,784 |
| 4 | PR04 | CAEAII | 64,050 | | | 64,050 | | 64,050 |
| 5 | PR05 | CLEAN TECHNOLOGY | 52,24,814 | | | 52,24,814 | | 52,24,814 |
| 6 | PR06 | BANK GUARANTEE | 4,51,66,011 | | | 4,51,66,011 | 1,00,00,000 | 3,51,66,011 |
| 7 | PR07 | HWMD DUMP SITE | 2,19,67,708 | | 1,80,000 | 2,21,47,708 | | 2,21,47,708 |
| 8 | PR08 | HWMD WASTE OF UCIL, Bhopal | - | | 6,782 | 6,782 | | 6,782 |
| 9 | PR09 | VTT FINLAND | 39,690 | | | 39,690 | | 39,690 |
| 10 | PR10 | ENVIS PROJECT | 21,57,190 | | 55,75,788 | 77,32,978 | | 77,32,978 |
| 11 | PR11 | IARI PROJECT | 22,50,808 | | 32,711 | 22,83,519 | | 22,83,519 |
| 12 | PR12 | ICAQIS (CESS) | 16,108 | | 1,40,17,509 | 1,40,33,617 | | 1,40,33,617 |
| 13 | PR13 | NSDI(DST) | 2,84,317 | | | 2,84,317 | | 2,84,317 |
| 14 | PR14 | ORRISA BOARD - MOBILE LAB | 95,180 | | 20,20,680 | 21,15,860 | | 21,15,860 |
| 15 | PR15 | PARYAVARAN DARSHAN | 3,12,95,969 | | 14,25,00,000 | 17,37,95,969 | | 17,37,95,969 |
| 16 | PR16 | STRENGTHENING OF NAQM | - | | 4,35,52,310 | 4,35,52,310 | | 4,35,52,310 |
| 17 | PR17 | UNEP Male PROJECT | 27,24,519 | | - | 27,24,519 | | 27,24,519 |
| 18 | PR18 | UNI DO PROJECT | 86,57,054 | | | 86,57,054 | | 86,57,054 |
| 19 | PR19 | WORKSHOP ON BMWM | - | | 4,15,263 | 4,15,263 | | 4,15,263 |
| 20 | PR20 | BAKARGANJ NALA PATNA | 18,602 | | 1,68,00,000 | 1,68,18,602 | | 1,68,18,602 |
| 21 | PR21 | BUDHANALA LUDHIYANA NRCP | 83,096 | | | 83,096 | | 83,096 |
| 22 | PR22 | CRITICALLY POLLUTED AREA CESS | 2,48,449 | | | 2,48,449 | 6,00,000 | (3,51,551) |
| 23 | PR23 | NAQMP CESS | - | | 8,80,00,000 | 8,80,00,000 | | 8,80,00,000 |
| 24 | PR24 | CPCB NNMS | 5,948 | | 91,605 | 97,553 | 15,71,707 | (14,74,154) |
| 25 | PR25 | BASELINE SERVEY OF INDUSTRIES | 32,19,501 | | 1,84,519 | 34,04,020 | | 34,04,020 |
| 26 | PR26 | UPGRADATION OF LAB (Cess) | 1,49,08,982 | | 4,67,65,716 | 6,16,74,698 | 85,872 | 6,15,88,826 |
| 27 | PR27 | WQM WB INPUT COST OF STAFF | 6,55,01,359 | | 1,25,927 | 6,56,27,286 | 1,10,70,000 | 5,45,57,286 |

| SL. NO. | Proj. Code | NAME OF THE PROJECT | Balance at Bank | Interest Accrued on Investments | Advances | Total | Less: Liabilities | Closing Balance of captial fund |
|---|---|---|---|---|---|---|---|---|
| 1 | | 2 | 3 | 4 | 5 | 6 = (3+4+5) | 7 | 8 = (6-7) |
| 28 | PR28 | CPCB-HWMD Waste of UCIL Pithampur | - | | | - | | - |
| 29 | PR29 | CPCB-Hydrology Project | 5,346 | | 26,70,000 | 26,75,346 | | 26,75,346 |
| 30 | PR30 | CPCB-NGT 25 | 87,58,28,060 | 54,38,172 | 11,70,21,915 | 99,82,88,147 | 12,86,700 | 99,70,01,447 |
| 31 | PR31 | CPCB-NGT 75 | 1,83,41,53,063 | 67,17,742 | 10,00,60,482 | 1,94,09,31,287 | 24,88,77,500 | 1,69,20,53,787 |
| 32 | PR32 | Upgradation of Air Lab Project | 1,81,40,448 | - | | 1,81,40,448 | | 1,81,40,448 |
| 33 | PR33 | CPCB-PIAs | 1,10,19,783 | | - | 1,10,19,783 | 16,00,000 | 94,19,783 |
| 34 | PR34 | CPCB-SNITI | - | | | - | | - |
| 35 | PR35 | CPCB-CPSU PROJ | 11,15,97,041 | | | 11,15,97,041 | | 11,15,97,041 |
| 36 | PR36 | CPCB-EPC | 1,12,74,72,941 | 63,97,850 | 22,81,85,226 | 1,36,20,56,017 | 2,975 | 1,36,20,53,042 |
| 37 | PR37 | CCBP Proj | 1,14,13,747 | | 95,73,750 | 2,09,87,497 | | 2,09,87,497 |
| 38 | PR38 | AWQM in North East | - | | | - | | - |
| 39 | PR39 | AQMM CESS 2017 | 22,72,274 | | 2,16,00,000 | 2,38,72,274 | | 2,38,72,274 |
| 40 | PR40 | NWQMN 2017 Cess | 19,64,064 | | | 19,64,064 | | 19,64,064 |
| 41 | PR41 | EC BY CPCB | 6,95,16,818 | | 1,10,70,000 | 8,05,86,818 | | 8,05,86,818 |
| 42 | PR42 | CPCB- AQM Strengthening of AAQMS | 4,98,877 | | 4,86,30,000 | 4,91,28,877 | | 4,91,28,877 |
| 43 | PR43 | CPCB- AQM O&M OF NAQP | 2,49,334 | | | 2,49,334 | | 2,49,334 |
| 44 | PR44 | CPCB WQM NWMP | 17,167 | | | 17,167 | | 17,167 |
| 45 | PR45 | CPCB WM DUMP SITE GANJAM ODISHA | 2,13,77,863 | | | 2,13,77,863 | | 2,13,77,863 |
| 46 | PR46 | CPCB (AL) AIR POLLUTION SOURCES AT TAJ | 685 | | 11,72,448 | 11,73,133 | | 11,73,133 |
| 47 | PR47 | CPCB WM DUMP SITE TALCHAR ODISHA | 1,06,42,021 | | | 1,06,42,021 | | 1,06,42,021 |
| 48 | PR48 | CPCB NCAP-2019 | 90,00,000 | | 16,00,000 | 1,06,00,000 | | 1,06,00,000 |
| | | TOTAL :- | **4,30,91,46,418** | **1,85,53,764** | **90,25,96,709** | **5,23,02,96,891** | **27,55,74,754** | **4,95,47,22,137** |

# CENTRAL POLLUTION CONTROL BOARD

## SCHEDULES FORMING PART OF FINANCIAL STATEMENTS AS AT 31ST MARCH, 2019

## SCHEDULE 25 - SIGNIFICANT ACCOUNTING POLICIES

### 1. BACKGROUND

The Central Government constituted the 'Central Board for the Prevention and Control of Water Pollution' on September 23, 1974. Under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the name of the Central Board was amended to Central Pollution Control Board referred as (Board/CPCB) under the Water (Prevention & Control of Pollution) Amendment Act, 1988.

The CPCB has been playing a key role in abatement and control of pollution in the country by generating, compiling and collating data, providing scientific information, rendering technical inputs for formulation of national policies and programmes, training and development of manpower and promoting awareness at different levels of the Government and Public at large.

### 2. ACCOUNTING CONVENTION

The Financial Statements comprising of Balance Sheet, Income & Expenditure Account & Receipts and Payments Account are prepared on the basis of historical cost convention and on a going concern on accrual basis unless stated otherwise. The Financial statements have been prepared as per 'Form of Financial Statement for the Central Autonomous Bodies' as per the directions of Ministry of Environment and Forest, Govt. of India vide their letter no. - G25012/1/2010CPW dated 10.02.10 as circulated by Controller General of Accounts, Ministry of Finance. The Financial Statement include Financial Statement of Head Office Delhi and its six Regional Directorates located at Bengaluru, Bhopal, Kolkata, Lucknow, Shillong, and Vadodara and sponsored/ earmarked projects.

### 3. USE OF ESTIMATES

The preparation of the Financial Statements in conformity with generally accepted accounting principles requires the management to make estimates and assumptions that affect the reporting balances of assets and liabilities and disclosures relating to contingent liabilities as at the date of the financial statements and reporting amounts of income and expenditure during the year. Contingencies are recorded when it is probable that a liability will be incurred, and the amount can be reasonably estimated. Actual results could differ from such estimates. Any difference between the actual result and the estimates are recognized in the period in which the results are known/ materialize.

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**4. INCOME**

a) Grants-in-Aid under heads General and Salary are accounted for on realization basis and credited to income and expenditure account.
b) Grants for capital assets are recognized in the statement of income and expenditure and utilised for the purpose for which it was received.
c) Interest is recognized on accrual basis.
d) Miscellaneous Receipts and other Incomes are recognized on receipts basis.
e) Grants/ Amount received for sponsored projects/scheme are treated as earmarked/ endowment fund and credited to the fund account which is utilized as per the terms of the grants/ for the purpose for which it was received. Interest earned on these grants is credited to the respective grant account.

**5. EXPENDITURE**

a) Monitoring expenses are recognized after the claim/ utilization etc are verified and processed at appropriate level.
b) Other expenses are accounted for on accrual basis.
c) The expenditure for **sponsored projects/scheme** are shown as utilization under the endowment/ earmarked fund.

**6. FIXED ASSETS**

a) Fixed Assets acquired out of grants received for that purpose are stated at cost of acquisition inclusive of freight inward, duties, taxes, incidental and other direct expenses related to acquisition.

b) Fixed Assets involving installation/ commissioning are capitalized at 80% of the cost at the time of supply and balance at the time of successful commissioning.

c) Fixed Assets received by way of non-monetary grants, (other than towards the Corpus Fund), i.e., gifted assets are taken in the financial books at nominal value. The incidental expenses on such assets such as clearing & forwarding charges, duties & taxes and other incidental expenses are capitalized.

d) Fixed assets procured against special purpose grant/receipt are not capitalized. These are taken to the respective fund account as per terms of the grant and shown as utilization.

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e) The Assets Registers have been maintained as per General Financial Rules (GFR) in respect of Laboratory Equipments, Instruments, Computers, Office Equipments and Furniture and Fixture. The register is in the process of being updated.

## 7. DEPRECIATION

Depreciation during the year is provided on straight-line method as per rates given below limited to the extent of 95% value of assets.

| Category of Assets | Rates (in %) |
|---|---|
| Free Hold Land | 0 |
| Building | 10 |
| Plant, Machinery & Equipment | 15 |
| Vehicles | 15 |
| Furniture & Fixtures | 10 |
| Computers | 40 |
| Library Books | 15 |

. In respect of additions to / deduction from the fixed assets during the year, depreciation is considered on full-year basis. Lease hold land is amortized over the lease period

## 8. FOREIGN CURRENCY TRANSACTION

Transaction denominated in foreign currency is accounted for at the exchange rate prevailing at the date of transaction.

## 9. INVENTORY

Stores and Spares including Chemicals, Glassware, Consumables & other Inventories have been valued at cost on FIFO basis and is being followed consistently. The cost includes cost of purchase including value added tax and other taxes wherever applicable.

**10. RETIREMENT BENEFITS**

For staff members employed prior to 2004, contribution is made to **Contributory Provident Fund (CPF)** scheme and for staff members employed after 2004, contribution is made to **New Pension Scheme** (**NPS**). The contribution **of CPF/ NPS** is charged to Income & Expenditure Account. In both the scheme, the employees also contribute an equal amount.

The Board also provides retirement benefit in the form of Gratuity to eligible employees. Liability towards Gratuity payable on death/retirement is accrued at the year-end on the basis of actuarial certificate. The liability is valued at Projected Unit Credit Method.

Provision for accumulated Leave Encashment benefit to employees is accrued and computed on the basis of actuarial valuation as at year end using projected unit credit method on the basis of actuarial certificate.

**11. EARMARKED FUNDS – SPONSORED PROJECTS**

The Funds Received & utilized for Sponsored Projects have been identified as Earmarked Funds. The funds are utilized towards the objectives of the specific Projects. Income on account of bank interest is added to the Sponsored Projects and not treated as income of the Board.

**12. PRIOR PERIOD, EXTRA-ORDINARY ITEMS AND EVENT OCCURING AFTER THE BALANCE SHEET DATE**

These are disclosed.

**13. CONTINGENT ASSETS AND CONTINGENT LIABILITIES**

Contingent liabilities are disclosed. Contingent assets are not recognized.

# CENTRAL POLLUTION CONTROL BOARD

## SCHEDULES FORMING PART OF FINANCIAL STATEMENTS AS AT 31ST MARCH, 2019

## SCHEDULE 26 - NOTES TO ACCOUNTS

| SCHEDULE 26.1 - CONTINGENT LIABILITIES & LITIGATIVE MATTERS | CURRENT YEAR | PREVIOUS YEAR |
|---|---|---|
| | | |
| Claims against the Entity not acknowledged as debts | - | - |
| In respect of banks | | |
| - Bank Guarantees given by/on behalf of Board | - | - |
| - Letter of Credit opened by Bank on behalf of the Board | 98,71,387 | 16,76,335 |
| - Bills Discounted with Banks | - | - |
| In respect of dispute demands | | |
| - Income Tax | - | - |
| - Sales Tax | - | - |
| - Municipal Tax | - | - |
| In respect of claims from parties for non-execution of orders, but contested by the entity | - | - |
| | | |
| TOTAL | 98,71,387 | 16,76,335 |

In respect of Court cases And Arbitration:

CPCB employees recruited before 1.1.2004 are covered under Contributory Provident Fund (CPF) scheme. However, the employees' union of CPCB is demanding coverage under Pension (Old) scheme and a court case is under progress in this regard. Contingent liability that may arise in the event of court's verdict goes in favour of employees' union demand, has neither been shown and nor been ascertained.

The Management believes that the outcome of above will not have any material adverse effect on the financial position of the Board.

| SCHEDULE 26.2 - CAPITAL COMMITMENTS | CURRENT YEAR | PREVIOUS YEAR |
|---|---|---|
| | | |
| Estimated value of contracts remaining to be executed on capital accounts and not provided for (net of advances) | | |
| - Sponsored Projects | 42,75,270 | 1,13,36,523 |
| - Head Office & Regional Directorates | - | - |
| TOTAL | 42,75,270 | 1,13,36,523 |

| SCHEDULE 26.3 - LEASE OBLIGATIONS | CURRENT YEAR | PREVIOUS YEAR |
|---|---|---|
| | | |
| The Board has entered into operating lease arrangements with parties for office. The lease are cancellable on mutual agreements. Lease rent paid has been charged to the statement of income and expenditure to the extent it relates to general fund | 70,31,536 | 73,75,705 |
| Future obligations for rentals under finance lease arrangements for plant and machinery | - | - |

| SCHEDULE 26.4 - CURRENT ASSETS, LOANS AND ADVANCES | CURRENT YEAR | PREVIOUS YEAR |
|---|---|---|
| | | |
| Staff Advances | 11,99,198 | 13,17,481 |
| Outside Projects Advances | 83,71,443 | 90,50,371 |
| State Pollution Control Board's Advances | 12,85,85,314 | 10,62,21,931 |
| Publications Advances | 5,51,672 | 4,58,747 |
| Purchase & other Advances | 35,59,908 | 38,60,723 |
| Other Advances – UC Required | 29,74,33,263 | 25,39,93,218 |
| Miscellaneous Advances | 6,75,038 | 5,88,854 |
| Total (A) | 44,03,75,836 | 37,54,91,325 |
| Advances made by Regional Directorates (B) | 1,34,24,225 | 1,22,04,694 |
| Project Advances ('C) | 90,25,96,709 | 55,00,12,389 |
| TOTAL(A+B+C) | 1,35,63,96,770 | 93,77,08,408 |
| These advances/ recoverable are subject to adjustments with respective agencies. | | |

| SCHEDULE 26.5 - LIABILITIES | CURRENT YEAR | PREVIOUS YEAR |
|---|---|---|
| | | |
| Deposits (Work) | 91,46,126 | 91,46,126 |
| Earnest Money Deposit | 14,61,813 | 11,57,815 |
| Retention Money | 73,560 | 73,560 |
| Security Deposit | 7,54,953 | 7,12,877 |
| Others – employee related | 38,38,724 | 24,11,353 |
| Others – miscellaneous (includes Rs. 13,04,522 carried forward out of opening) | 21,96,522 | - |
| Total | 1,74,71,698 | 1,35,01,731 |
| These credit balances are subject to adjustments with respective agencies. | | |

| SCHEDULE 26.6 - ADVANCES RECEIVED BY THE REGIONAL DIRECTORATES DURING THE FINANCIAL YEAR AND ARE OUTSTANDING AS UNSPENT AS AT 31ST MARCH, 2019 | CURRENT YEAR | PREVIOUS YEAR |
|---|---|---|
| | | |
| GSDP Project (2018-19) - Shillong | 2,41,654 | - |
| GSDP Project (2018-19) - Vadodara | 6,68,430 | - |
| MOEF Project (2018-19) - Shillong | 27,59,758 | - |
| BMW Training - Shillong | 9,020 | 9,020 |
| Hydrology Project Fund - Bangalore | 4,00,000 | - |
| National Hydrology Project - Bangalore | 1,70,000 | - |
| Total | 42,48,862 | 9,020 |

**SCHEDULE 26.7 - RETIREMENT BENEFITS**

CPF SCHEME - For staff members employed prior to 2004, contribution is made to contributory Provident Fund (CPF) scheme and for staff members employed after 2004, contribution is made to New Pension Scheme (NPS). The contribution of CPF/NPS is charged to Income & Expenditure Account. In both the scheme, the employees also contribute an equal amount. The Board has created Contributory Provident Fund (CPF) under guidelines called The Central Board for the Prevention & Control of Water Pollution Employee's contributory Provident Fund since 1977-78 and the employee contribution is deducted from the salary of the employee and transferred to CPF Fund. The accounts of CPF Fund are audited up to 31st March, 2007 only. The shortfall in PF liability to be borne by Board, if any, will be ascertained after completion of CPF audit.

GRATUITY - The Board also provides retirement benefit in the form of Gratuity to eligible employees. Liability towards Gratuity payable on death/retirement is accrued at the year-end on the basis of actuarial certificate. The liability is valued at Projected Unit Credit Method. During the year the liability has been valued by a qualified actuary and an amount of Rs. 47,516,157 (Previous Year Rs. 31,018,962) has been accounted for as provision for gratuity and charged to income and expenditure account.

LEAVE ENCASHMENT - Provision for accumulated Leave Encashment benefit to employees is accrued and computed on the basis of actuarial valuation as at year end. During the year, based on the certificate issued by a qualified actuary, an amount of Rs. 22,538,678 (Previous Year Rs. 12,834,340) has been accounted for as provision for leave encashment and charged income and expenditure account. The liability is valued using Project Unit Credit Method.

LEAVE TRAVEL CONCESSION - The liability for leave travel concession for staff cannot be ascertained in the absence of sufficient details.

**SCHEDULE 26.8 - PHYSICAL VERIFICATION OF ASSETS**

a) The Physical Verification of assets of the board was carried out in the phased manner as per program of verification. Accordingly, certain assets have been verified during the year. There are certain obsolete/ unused items which will be adjusted once the reconciliation process is complete.

b) Capital work in progress includes Rs. 2,010,655 being advance given to supplier's (Delhi Zone) paid in financial year other than the current financial year. Necessary adjustment entries will be passed once the supporting details including details of installation etc. are approved at the appropriate level.

**SCHEDULE 26.9 - ADVANCES TO STATE POLLUTION CONTROL BOARDS**

Certain advances have been given to the state pollution control boards for implementing various projects/ activities. These expenditures are recognised once the utilisation certificate is submitted and aprroved. Utilisation certificate is pending from certain state pollution boards for which necessary follow up is being made.

**SCHEDULE 26.10 - LIABILITIES WRITTEN BACK**

Other income include liability written back during the financial year amounting to Rs. 3,88,303/- as management consider these are no longer payable.

**SCHEDULE 26.11 - EARMARKED FUNDS- SPONSORED PROJECTS**

a) During the year 48 Nos. of projects were carried out by Central Pollution Control Board as per details given in schedule 'C' (attached).

b) During the year the total expenditure Rs. 185,656,239/- is incurred in sponsored projects.

c) There are unspent balances in some Sponsored/ Earmarked Projects. These will be adjusted according to the instructions from Sponsors/ Donors once the same are received.

d) The fixed assets procured under sponsored projects are not capitalized and are being expensed off as per policy stated in Schedule 25- sub-schedule 4(e).

e) Annexure-1 to schedule C includes few sponsored projects that are either closed or there is no movement since last financial year. Funds amounting to Rs. 62,788,002/- are lying in respective project's bank accounts.

f) As per the terms and conditions of project sanction agreement, the unspent funds at closure of the project is required to be transferred directly from account where the funds are granted. The balance funds lying at the DTS project amounting to Rs. 539,784/- was transferred during the year by the regional directorate of Bangalore to their account. However, the regional directorate at Bangalore has parked these funds under a separate fixed deposit and these funds are refundable to concerned agency.

| SCHEDULE 26.12 - DETAILS OF PRIOR PERIOD EXPENSES | CURRENT YEAR | PREVIOUS YEAR |
|---|---|---|
| Professional Charges | 6,45,000 | - |
| AMC Expenses | 4,12,218 | 67,629 |
| Travelling Expenses | 2,83,697 | - |
| Repair & Maintenance Expenses | 5,68,448 | - |
| Interest on STDR's | 15,51,325 | - |
| Miscellaneous Expenses | 2,63,915 | |
| Total | 37,24,603 | 67,629 |

| SCHEDULE 26.13 - FOREIGN CURRENCY TRANSACTIONS | CURRENT YEAR | PREVIOUS YEAR |
|---|---|---|
| a) Value of Imports Calculated on C.I.F Basis: | | |
| --Purchase of finished Goods | - | - |
| --Raw Materials & Components (Including in transit) | - | - |
| --Capital Goods, Stores, Spares and Consumables | 31,63,653 | 15,20,977 |
| Total | 31,63,653 | 15,20,977 |
| b) Expenditure in foreign currency: | | |
| --Travel | 2,08,796 | - |
| --Remittances interest payment to Financial Institution/Banks in foreign Currency | - | - |
| --Other expenditure: | | |
| --Commission on Sales | - | - |
| --Legal and Professional Expenses | - | - |
| --Miscellaneous Expenses | - | - |
| Total | 2,08,796 | - |

| SCHEDULE 26.14 - REMUNERATION TO AUDITORS | CURRENT YEAR | PREVIOUS YEAR |
|---|---|---|
| --As Auditors* | 2,24,200 | 2,24,200 |
| --Taxation matters | - | - |
| --For Management services | - | - |
| --For certification | - | - |
| --Others | - | - |
| Total | 2,24,200 | 2,24,200 |

* This includes provision for audit fee for relevant financial year 2018-19 and audit fee paid to predecessor auditor for any previous financial year.

| SCHEDULE 26.15 - OTHER NOTES |
|---|
| a) Amounts for the year ended and as at 31st March, 2018 were audited by M/s. KAMG & Associates, Chartered Accountants. Amounts and other disclosures for the preceding year are included as an integral part of the current year financial statements and are to be read in relation to the financial statements and other disclosures relating to the current year. |
| b) The figures in the Balance Sheet and Income and Expenditure Account have been disclosed in Indian (Rs.) rupees. Corresponding figures for the previous year have been regrouped/ rearranged wherever neccessary. |
| c) Schedules 1 to 26 are annexed to and form an integral parts of the Balance Sheet as at 31st March 2019 and the Income and Expenditure Account for the year ended on that date. |

As per our report of even date

For Central Pollution Control Board

For Nangia & Co. LLP
Chartered Accountants
Firm Reg. No. 002391C/N500069

(Vikas Gupta )
M.NO. 076879
Partner

NANGIA & CO. LLP CHARTERED ACCOUNTANTS

(S. P. Singh Parihar, IAS)
Chairman

(Prashant Gargava)
Member Secretary

(Virendra Bansal)
Accounts Officer

(Diganta Kalita)
Assistant Accounts Officer

Signed at New Delhi on 19 NOV 2019

# CHAPTER XIII

# ANNUAL ACTION PLAN

## Introduction

Central pollution Control Board (CPCB) constituted under the Water (Prevention and Control of Pollution) Acts, 1974 is a 100% Grant-in-aid organization of Ministry of Environment, Forest & Climate Change (MoEF&CC), Govt. of India. CPCB serves as a technical wing of MoEF&CC and co-ordinates with the State Pollution Control Boards (SPCBs)/Pollution Control Committees (PCCs) for implementation of plans and programmes relating to abatement of pollution. Project and programmes are executed through in-house efforts and with the assistance of institutions like IITs, CSIR Labs, Engineering Colleges, Universities and other R&D Institutions. The functions of CPCB are mentioned below:

## Reforms Measures and Policy Initiatives

CPCB is focusing on strengthening of Ambient Air Quality Monitoring network for assessment of air quality at national, regional and local level. NAMP stations operated through State pollution control Boards need further strengthening to monitor all notified parameters for ambient air, besides emphasis is being given for establishment of Continuous Ambient Air Quality Monitoring Stations (CAAQM) in all major cities.

The manual water quality monitoring network is being expanded further, realizing the need for establishment of a network of real time water quality monitoring stations on river Ganga to ensure that water quality is monitored continuously to see the impacts due to the various initiatives taken

Efforts are being made for strengthening of the compliance mechanism, so that no untreated industrial effluent is discharged into the environment. Installation of online effluent and emission monitoring systems in 17 category of polluting industry and data connectivity with SPCB/CPCB is a step towards self-monitoring and transparency.

Efforts are being made for improving the performance of existing sewage treatment plants (STPs) and adopting non-conventional technologies that are in synergy with the conventional methods for improving the water quality in particular that of river Ganga and its tributaries.

Initiatives are being taken for water conservation in Industries through process modification and adoption of state of art technology. Zero liquid discharge concepts shall be applied wherever possible to conserve the water and protect the environment.

Challenges of Municipal Solid Waste Management and domestic sewage treatment would be given utmost attention.

## Targets and Achievements (2018-19)

Outcome of various activities of CPCB during financial year 2018-19 is briefed as below:

### Assessment and Monitoring of Pollution

- Operation and maintenance of 731 manual Ambient Air Quality Monitoring Stations (AAQMS)
- CPCB has developed a network of real time data from CAAQM stations being operated by CPCB, SPCBs and PCCs. This data is provided to all stakeholders and published in public domain for taking corrective measures in time. CPCB network has expanded to total 167 stations located in 101 cities during 2018-19. CPCB is responsible for operation and maintenance of 15 continuous ambient air quality monitoring stations (CAAQMS).
- "Clean Air Campaign" was organized from November 01, 2018 to November 10, 2018 where in 52 joint teams including members from Ministry of Environment, Forest & Climate Change, Central Pollution Control Board and Government of Delhi and NCR States (Noida, Gurugram, Greater Noida, Faridabad and Ghaziabad) took on-spot ground actions to control air polluting activities.
- Operation of 3500 Water Quality Monitoring Stations (WQMS) at various aquatic resources.
- CPCB has installed Real Time Water Quality Monitoring Systems (RTWQMS) on river Ganga at 36 locations bringing the total number of RTWQMS to 44.
- A Water Quality Management Plan on River Hindon has been prepared based on assessment of water quality of the river and its tributaries. Quantification of municipal and industrial wastewater load reaching from the urban centers has been incorporated
- 70 National Ambient Noise Monitoring Network (NANMN) stations have been installed spreading over 10 cities.
- Draft Criteria for identification of polluted river locations has been prepared and circulated to stakeholders seeking comments
- Guideline for Environmentally Sound Facilities for handling, Processing and Recycling of End of Life Vehicles has been prepared in January, 2019.
- CPCB is dealing Court cases regarding environmental protection . The Court cases have increased manifold over the years and at present 55 cases are pending before the Hon'ble Supreme Court, 400 cases before the National Green Tribunal and 188 cases are pending before the Hogh Court. A portal has been established in CPCB for tracking of the Court cases.

### Industrial Pollution Control

- During 2018-19, standards for 4 industrial sectors i.e. Airport Noise, Man-made Fiber (revision) Paint Industry and Thermal Power Plant (water consumption and stack height) have been notified.
- Further, draft notification for Paint, Brick Kiln (revision), Fermentation, Coffee Industry (revision) and Tannery Industry (revision) have been published during the year 2018-19.
- Standards for Pulp and Paper Industry (revision), Diesel Locomotives, Automobile Service Stations and Bus Depots, Iron and Steel Industry (revision) and Pharmaceutical Industry (revision and addition) have been presented before the Expert Committee of MoEF&CC and are under the process of finalization.

- CPCB carried out assessment and evaluation of CEPI in 100 PIAs and submitted the details to MoEF&CC for consideration and appropriate action.
- All SPCBs/PCCs/CETPs were directed for installation of Online Continuous Effluent Monitoring System (OCEMS) and for providing data connectivity to SPCBs/PCCs/CPCB servers. Presently, 104 CETPs are connected with CPCB server.
- The Ecomark Steering Committee approved the Ecomark criteria for Coir & Coir Products and the same was notified vide Gazette Notification G.S.R. 893 (E), dated 18/9/2018.
- Out of 3527 targeted industries under 17 categories, 2786 industries have installed the Online Continuous Effluent / Emission Monitoring System (OCEMS) and connected with server.
- CPCB started a scheme of inspection of 17 categories of highly polluting industries based on computer generated SMS alerts due to violation of effluent and emission standards recorded in OCEMS. On monthly basis these SMS alerts are assessed sector wise and high SMS alerts generating industries are selected for further inspection to verify the compliance status. Further those industries which did not submit data in last 48 hours (off line mode) and whose data variation does not exceed more than ± 5% are also selected for further inspection to verify the compliance status. Total 470 industries were inspected till December 2018 and 291 Directions were issued under Section 5 of EPA, 1986 and 1 Direction under Section 18(1)(b) under Air/Water to SPCB, for non-complying industries
- CPCB has inspected 200 STPs during F.Y. 2018-19 in Delhi NCR, Haryana, Punjab and NCR region of U.P.
- CPCB has inspected/ visited of C&D sites of about 150 in Delhi NCR in F.Y. 2018-19. CPCB issued 04 nos. of show cause notice and 28 nos. of direction.

### Control of pollution in Ganga

- All the 961 Grossly Polluting Industries (GPIs) in the Ganga Basin have been inspected and action has been taken against non-complying unit. 799 GPIs have connected their OCEMS to CPCB Server.
- Adequacy assessment of all the Distillery and Sugar units has been carried out. Draft Charter for Sugar and Distillery have been prepared.

### Waste Management:

- E-Waste (Management) amendment Rules, 2018 were notified vide G.S.R 261E dated March 22, 2018. In the amended rules there is provision for giving collection targets to producers those have recently started their business and their products have not reached “End of Life”. In such cases collection targets will be calculated by Schedule III(A) of the amended rules, 2018. EPR Authorizations issued to 1169 (one thousand one hundred and sixty-nine) producers.
- Producer Responsible Organizations (PRO) Registration has been granted to 20 (twenty) PRO.
- 16 (sixteen) inspections were carried in Delhi NCR for compliance monitoring of EPR authorized producers.
- 04 (four) collection centers in Delhi NCR by CPCB and 12 (twelve) collection centers in Kerala by Kerala SPCB have been inspected.
- An advisory committee has been constituted for providing guidance on the matter related to management of E Waste.

- HS code for the entire schedule–I items has been provided to Custom Department.
- Prepared technical guidelines to help stakeholders in implementing the Bio-medical Waste Management Rules, 2016.
- During the year 2018-2019, CPCB has conducted inspection of 22 no. of Common Biomedical Waste Treatment Facilities (CBWTFs) and based on the non-compliances, directions under section 5 of the Environment (Protection) Act, 1986 has been issued to 20 CBWTFs for ensuring compliance to BMWM Rules, 2016.
- As per the order of Hon'ble NGT, condition of Environmental Compensation Charges has been asked to be deposited by 14 nos. of non- complying CBWTFs.
- Prepared checklist for Performance Evaluation of Veterinary Hospitals. CPCB has conducted inspection of 84 nos. of Veterinary Hospitals for verification of compliance to the BMWM Rules, 2016.
- Rule 9 of the hazardous waste management rules lays down provision for utilization of hazardous waste as supplementary resource or for energy recovery. Such utilization can be authorized by SPCBs/PCCs for the wastes, for which Standard Operating Procedures (SOPs) or guidelines are prepared by CPCB after conducting trial studies. During 2018-19, CPCB has prepared 10 Standard Operating Procedures (SOPs) for utilization of 08 types of hazardous waste such as Spent Aluminium chloride, Spent Sulphuric acid, Spent Ammonium chloride, Spent liquid Glauber Salt, Spent Alkali Bromide, Spent ammonium carbonate, Aluminium dross rejects/residues, tarry residue as a resource, which otherwise would have been disposed in incinerator or secured landfill. The SOPs outline utilization process details, operational parameters, pollution control measures, environmental standards, checklist of minimal requisite facilities etc.
- Prepared 'Guidelines for Environmentally Sound Facilities for handling, Processing and Recycling of End of Life Vehicles' in January, 2019. These guidelines outline Collection & Handling of ELVs; Handling, storage and transportation of ELVs; Environmentally sound de-pollution of ELVs; Environmentally sound dismantling & segregation; Environmentally sound Shredding & separation and processing residues; Technologies for the ELV recycling process; Requirements for setting up of ELV recycling facility and Management of various wastes generated during depollution, dismantling and shredding of ELVs.
- Assessment of Economic viability of Co-processing of plastic waste in cement kilns and waste to energy plants.
- Evolved checklist for preparation of Action Plan for EPR for plastic waste management
- Evolved Online registration facility for Producers, Brand Owners and Importers to submit the Extended Producer Responsibility for collecting back the plastic waste generated by their packaging's.
- Guidelines for National Framework has been evolved for implementation of EPR Action Plan for plastic waste.
- Evolved Guidelines for recognition of Producer Responsibility Organization (PRO)/ Agency.
- Issuing Certificate to Manufacturers/Sellers for manufacturing, marketing & Selling of Compostable Carrybags/Products.
- Filing Execution Application in OA 247/2017 for non-compliance of Hon'ble NGT Judgement dated 20.07.2018.
- CPCB levied Environmental Compensation vide letter dated 16.01.2019 on East Delhi Municipal Corporation, South Delhi Municipal Corporation, North Delhi Municipal Corporation, New Delhi Municipal Council, Delhi Cantonment Board under section 31A of the Air (Prevention and Control of Pollution) act, 1981 for Solid Waste Management

- Under Clean Air campaign in Delhi and NCR) September 2018 – Feb, 2019), inspection was carried out with regard to open burning of garbage, industrial waste dumping, traffic congestion & construction activities & road sweeping etc.
- Amendments discussed in the Board meeting in respect of revising the Buffer Zone Guidelines for MSW landfill site
- In Compliance to Hon'ble NGt OA 606/2018, prepared draft Guidelines for disposal of Legacy waste (Old MSW). The draft has been submitted in the Hon'ble NGT.

## Training, Mass Awareness and Environment Data Bank

- Implementation of Raj-Bhasha (Hindi) in CPCB and organizing Hindi Diwas, Workshop and Training Programmes for CPCB officials.
- Published technical and scientific reports for mass awareness.
- Conducted national training programmes on various environmental pollution and prevention areas. During the year 2018-19, twenty-one training programmes were scheduled & organized by Environmental Training Unit (ETU) through reputed training/ R&D/Professional institutes in various priority areas related to environment.
- CPCB participated in the exhibition at Kumbh Mela-2019 at Prayagraj during 14$^{th}$ January to 11$^{th}$ March, 2019
- CPCB organized certificate course on pollution monitors (air and water) under Green Skill Development Programmes (GSDP).
- Further under the 'Swachh Bharat Mission', CPCB in collaboration with National Productivity council under the guidance of MoEF&CC and MoHUA, Govt. of India, initiated a project for conducting Nationwide Capacity Building Program on implementation of Waste Management Rules, notified by the MoEF&CC in the year 2016 in 68 cities.

## Proposed Activities for 2019-20

- Strengthening of ambient air and water quality monitoring network.
- Establishing real time water quality monitoring stations on river Ganga and other major rivers to assess the water quality on real time basis.
- Expansion of continuous ambient air quality monitoring network to cover million plus cities and state capitals.
- Strengthening of the compliance mechanism, so that no untreated industrial effluent is discharged into the environment
- Improving the performance of existing sewage treatment plants (STPs) and adopting non-conventional technologies which is in synergy with the conventional methods for improving the water quality of river Ganga and its tributaries.
- Emphasis on Waste Management.
- Operation and maintenance of Laboratory and its management.

## Budget Allocation for 2019-20.

CPCB has been allocated total budget of Rs. 100 Crore in following Three Heads.

| | | |
|---|---|---|
| General | : | 36.00 crore |
| Capital | : | 04.00 crore |
| Salary | : | 60.00 crore |

## 5.1 Project Head-wise Budget Allocation for 2019-20

The allocation made against each Project Head is summarized as under:

| Budget Heads | Title of the Budget Head | Allocation (₹ in Lakh) | | |
|---|---|---|---|---|
| | | Head Office | Regional Directorate | Total |
| I | Pollution Assessment (Survey and Monitoring) | 108.5 | 98 | 206.5 |
| II | Scientific, Technical Activities and R&D Activities | 966 | 476 | 1442 |
| III | Industrial Pollution Control(standards, enforcements and technologies): | | | |
| | Standard Development | 77 | | 77 |
| | Enforcement | 5578 | 1882 | 7460 |
| | Technology | 22.5 | | 22.5 |
| IV | Training and Awareness: | | | |
| | Training Programmes | 127 | 16.5 | 143.5 |
| | PR, Mass Awareness Programmes & Hindi , | 93 | 10.5 | 103.5 |
| | Library | 26 | 6 | 32 |
| V | Information (Database) Management | 224 | 21 | 245 |
| VI | Waste Management and Urban Pollution Control | 248 | 20 | 268 |
| | Total | 7470 | 2530 | 10000 |

# CHAPTER XIV

# OTHER IMPORTANT ACTIVITIES DEALT BY CENTRAL POLLUTION CONTROL BOARD

## 14.1 PLASTIC WASTE MANAGEMENT

### 14.1.1 EPR Registration

Ministry of Environment, Forest & Climate Change has Notified the PWM Rules, 2016, as amended 2018. Under it is clearly mentioned that manufacturing and use of MLP which is non-recyclable be used for energy recovery from waste i.e. conversion of waste materials into usable heat, electricity or fuel through variety of process including combustion, gasification, pyralization, co-processing and land fill gas recovery. As per provision 13(2) Every producer or Brand owner shall, for the purpose of registration make an application to–i) concerned SPCBs/PCCs; or ii) The central Pollution Control Board, if operating more than two States.

According to Rules 9(1&2) and 13(2) of PWM Rules, 2016, as amended 2018, CPCB has prepared a Checklist for Registration of Extended Producer Responsibility (EPR) for the Brand-owners (BO) and Producers, while, CPCB evolved an Online Registration Portal w.e.f. August, 2018 to submit the EPR obligations for collecting back the MLP or plastic wastes generated from their products. Subsequently, number of BOs/Producers applied through online facility and uploaded the necessary documents as per Checklist. CPCB after evaluating the applications, issuing registration certificate to BOs/Producers with EPR targets, who are fulfilling the criteria as per the EPR checklist issued by CPCB. The list of BOs/Producers is available on CPCB's website and updated time to time.

CPCB is also recognising the Producer Responsibility Organizations (PROs) or Waste Management Agencies to facilitate the process of Registration of Brand-owners (BO)/ Producers to meet EPR targets through organizing the necessary collection, segregation and recycling activities on the ground and work with municipal local bodies. The recognized list of PROs is also available on CPCB's website and updated time to time.

Further, to evolve National Framework for EPR Action Plan CPCB constituted a Core Group representing Members from Government Departments, PROs, NGOs, and Brand Owners etc. The core group has finalized the draft framework & submitted to CPCB. The draft National Framework has been forwarded to MoEF&CC for finalization.

**Initiatives taken for effective implementation of Plastic Wastes Management Rules 2016, as amended, 2018:**

Hon'ble NGT in OA 247/2017 passed a judgement dated 20.07.2018 in the matter of CPCB Vs Secretaries-in-charge Urban Development Departments (State/UTs) and Chairmen, SPCBs/PCCs for compliance of PWM Rules, 2016, as amended, 2018 in time bound manner.

i Hon'ble NGT in OA 247/2017 passed a judgement dated 20.07.2018 in the matter of CPCB Vs Secretaries-in-charge Urban Development Departments (State/UTs) and Chairmen, SPCBs/PCCs for compliance of PWM Rules, 2016, as amended, 2018 in time bound manner.

ii. Hon'ble NGT passed a judgement dated 12.03.2019in Execution Application petition EA13/2019 in in the matter of CPCB Vs Secretaries-in-charge Urban Development Departments (State/UTs) and Chairmen, SPCBs/PCCs for compliance of PWM Rules, 2016as amended, 2018, to submit the Annual Reports and Action Plan within one month from the date of Order.

iii. Issuing Certificate to Manufacturers/Sellers for manufacturing, marketing & Selling of Compostable Carrybags/Products.

The Consolidated Annual Report for the year 2017-18 on implementation of PWM Rules was submitted to the MoEF&CC along with recommendations to MoEF & CC.

Environmental Compensation imposed in the follow-up of OA No. 630/2018 on Delhi Government Organizations those are PWD, DSIIDC, DDA, IF&CD and Delhi University for non-compliance of Solid & Plastic Waste Management Rules, 2016.

## 14.2 SOLID WASTE MANAGEMENT

Central Pollution Control Board (CPCB) as mandated under the Solid Waste Management Rules, 2016 coordinates with the State Pollution Control Boards (SPCBs)/Pollution Control Committees (PCCs) regarding implementation of the Solid Waste Management Rules. CPCB also asked SPCBs/PCCs for timely submission of Annual Reports on implementation of the SWM Rules, 2016. During the year 2017-2018, out of 35 SPCBs/PCCs, 16 SPCBs/PCCs submitted the Annual Report within stipulated time and 8 SPCBs/PCCs submitted Annual Report later on. The Consolidated Annual Report for the year 2017-18 was submitted to the MoEF&CC along with recommendations.

### Initiatives taken for effective management of SWM Rules, 2016:

**i. Guidelines on Legacy Waste: -**

- In compliance to Hon'ble NGT order dated 16-01-2019 in OA 606/2018, CPCB prepared Guidelines on "Disposal of Legacy Waste". The guidelines have been submitted to Hon'ble NGT as well as all SPCBs/PCCs for implementation.

**ii. Directions Issued: -**

- CPCB issued Directions dated 16.01.19 under Section 31A of the Air (Prevention & Control of Pollution) Act, 1981 to East Delhi Municipal Corporation (EDMC), South Delhi Municipal Corporation (SDMC), North Delhi Municipal Corporation, New Delhi Municipal Corporation, Delhi Cantonment Board (DCB) and imposed Environment Compensation for non-compliance of SWM & PWM Rules, 2016.
- CPCB issued Directions on 19.03.19 u/s 5 of the Environment (Protection) Act, 1986 to all SPCBs/PCCs for setting up of Material Recovery Facilities (MRF) prior to WtE plant/energy recovery system.

## 14.3 Bio-Medical Waste Management

Biomedical Waste Management Rules, 2016 (BMWM Rules, 2016) notified under Environment (Protection) Act, 1986 in March, 2016 by Ministry of Environment Forest & Climate Change (MoEF & CC) which stipulates about segregation, storage, collection, reception, handling, transport, treatment & disposal of bio-medical waste in an environmentally sound manner. Said Rules were further amended in March, 2018 by

MoEF & CC in which Format for submission of Annual Report by State Pollution Control Boards (SPCBs) and Pollution Control Committees (PCCs) is notified. Following are the new provisions amended under Biomedical Waste Management Rules, 2016, as amended:

- Grant of authorization to all Health Care Facilities (HCFs) irrespective of the quantity of waste generated.
- Phasing out of chlorinated plastic bags and gloves excluding blood bags by March, 2019.
- Pre-treatment of highly infectious waste with hospital;
- Bar-code system and GPS is required to be established, by March, 2019 by the occupier or operator of CBWTFs.
- In cities where terminal sewage treatment plant does not exist all bedded HCF which have less than 10 beds shall install Effluent Treatment Plant (ETP).
- Installation of Common Bio-Medical Waste Treatment Facilities (CBWTFs) in all states to facilitate central disposal of biomedical waste. BMWM Rules, 2016 discourage captive treatment and disposal facilities.
- Up-gradation of existing incinerators to comply with stringent emission standards as stipulated under BMWM Rules, 2016 which included 2 sec. residence time also.
- Constitution of 'State level Advisory Committee (SLAC) and district level Monitoring Committee (DLMC)'.

## Bio-medical Waste Management Scenario

The annual report information on bio-medical waste management for the year 2017 has been received from all of SPCBs/UTs & DGAFMS except Andaman & Nicobar, Lakshadweep, and Manipur.

As per the compiled annual report information for the year 2017, there are 2, 38,170 no. of Health Care Facilities (HCFs) out of which 87,269 no. of HCFs are bedded and 1,51,208 no. of HCFs are non-bedded. Only 84,800 no. of HCFs have granted authorization under the BMW Rules. The total generation of bio-medical waste is about 557 Tonnes per day. There are 198 no. of CBWTFs in operation (24 under construction) and 9,830 no. of HCFs are having captive bio-medical waste treatment and disposal facilities, which are involved in treatment and disposal of 518 Tonnes out of 557 Tonnes per day bio-medical waste. As reported, 23,942 no. of HCFs/CBWTFs observed to be violating the provisions of the BMW Rules. The detailed bio-medical waste management scenario in the Country is given below:

| | | |
|---|---|---|
| No. of HCFs | : | 2,38,170 |
| No. of bedded HCFs | : | 87,269 |
| No. of non-bedded HCFs | : | 1,51,208 |
| No. of beds | : | 20,94654, |
| No. of CBWTFs | : | 198* + 24** |
| No. of HCFs granted authorization | : | 84,800 |
| No. of HCFs having Captive Treatment Facilities | : | 9,830 |
| No. of Captive Incinerators Operated by HCFs | : | 225 |
| Quantity of bio-medical waste generated in Tonnes/day | : | 557 |
| Quantity of bio-medical waste treated in Tonnes/day | : | 518 |

| | | |
|---|---|---|
| No. of HCFs violated BMW Rules | : | 23,942 |
| No. of Show-cause notices/Directions issued to defaulter HCFs | : | 18,210 |

Note: (i) * - CBWTFs in operation (ii) ** - CBWTFs under installation

## Verification of compliance to the BMWM Rules, 2016 by CBWTFs:

As per BMWM Rules, 2016 Common Biomedical waste Treatment Facilities are required to upgrade their incinerators so as to comply with new emission norms as well as two seconds residence time in secondary combustion chamber by March, 2018. Since April, 2018 CPCB has conducted inspection of 22 CBWTFs for verification of compliance to BMWM Rules, 2016. Based on the non-compliances observed during the inspection, directions under section 5 of Environment (Protection) Act, 1986 have been issued to 20 nos. of CBWTFs. Also, Directions for deposition of Environment Compensation Charges have been issued to 15 no. of CBWTFs.

## Guidelines for packaging and transportation of biomedical waste for utilization

Biomedical Waste Management Rules, 2016 (BMWM Rules, 2016) stipulates that every Healthcare Facility shall take all necessary steps to ensure that biomedical waste is handled without any adverse effect to human health and the environment. CPCB has prepared guideline for packaging and transportation of biomedical waste such as pleural fluid, ascetic fluid, HBsAG positive blood, placenta etc are also generated by the Healthcare Facilities (HCFs) which are being utilized by pharmaceutical industry for production of drugs, reagent chemicals, markers, etc. These guidelines provide guidance to the Healthcare Facilities as well as to industry/vendors for the purpose of utilization waste for collection, transportation, use and disposal of biomedical wastes to ensure handling of biomedical waste with adequate safe guard to protect Health and Environment. Following are the salient features of BMWM Rules, 2016:-

1. Applicability of Authorization for stakeholders

- The industries/vendors involved in collection and transportation of biomedical waste.
- The Health Care Facility involved in providing biomedical waste to an industry
- No authorization would be necessary for the Courier Company or transporter of the biomedical waste.

2. Responsibilities of the Healthcare Facilities

- Inform the prescribed authority about the type of biomedical wast
- Hospitals shall provide bio-medical waste only to those industries / vendors who are authorised by concerned SPCB/PCC under BMWM Rules, 2016
- Records should be maintained

3. Responsibilities of Vendor/Industry
4. Procedure for packaging:

- Primary receptacle, Secondary receptacle, third receptacle
- The containers should be marked with sign of biohazard along with following warning text “Sealed Bio-Medical Waste – Handle with Care”

5. Transportation of Biomedical Waste
6. Management of plastic containers
7. Management of liquid waste

## Status of Registered Importers of New Lead Acid Batteries in the Country:

About 2321 importers have been granted registration by MoEF&CC and CPCB till March, 2018 for import of new lead acid batteries, however only 1078 importers have valid registration. CPCB has cancelled registrations of about 1243 importers for failing to comply with conditions of registration. The status of importers of new lead acid batteries and registration granted to importers is available real-time on BRMS portal, which makes only 1078 authorized of importers till March, 2018.

### Status of Registered Importers of New Lead Acid Batteries as on March, 2018

| Status of NLAB Registration | by MoEF prior to May, 2010 | by CPCB till March 2018 | Total |
|---|---|---|---|
| Registrations granted | 1072 | 1249 | 2321 |
| Registrations cancelled | 849 | 394 | 1243 |
| Effective registered importers | 223 | 855 | 1078 |

## Registered Recyclers of Lead bearing waste:

As per information received from SPCBs, 541 lead bearing waste recycling units having environmentally sound recycling facilities and total established recycling capacity is 2,673,876 MTA.

## Status of Hazardous Waste Generation and its Management

Hazardous waste inventory for the year 2016-17 was compiled by CPCB based on information received from SPCBs/PCCs. State/UT.

a) There are 56,350 numbers of hazardous waste generating industries in the country authorized to generate about 25.46 Million Metric Tonnes (MT) of hazardous wastes.

b) As per the annual return submitted by the occupiers, about 7.17 Million MT of hazardous waste have been generated during April, 2016-March, 2017. The details of the management of hazardous waste during the said period (i.e. quantity of hazardous waste disposed, recycled/utilized and stored) are as given below:

| | | | |
|---|---|---|---|
| 1 | Quantity of HW disposed | | 2.84 Million MT (39.65%) |
| | (i) Common SLF | : | 1.68 Million MT |
| | (ii) Captive SLF | : | 0.89 Million MT |
| | (iii) Common Incinerator | : | 0.23 Million MT |
| | (iv) Captive Incinerator | : | 0.05 Million MT |
| | Quantity of HW Recycled/ Utilized | | 3.68 Million MT (51.30%) |
| | (i) Recycling of commonly recyclable hazardous wastes (Schedule IV listed wastes under the HOWM Rules, 2016) | : | 1.00 Million MT |
| | (ii) Co-processing in Cement Kilns | : | 0.55 Million MT |
| | (iii) Captive utilization | | 1.66 Million MT |
| | (iv) Non-captive utilization (other than (ii) above) under Rule 9 of the HOWM Rules, 2016 | : | 0.47 Million MT |

Quantity of hazardous waste stored at the occupier's premises are 0.90 Million MT at the end of financial year i.e. March, 2017.

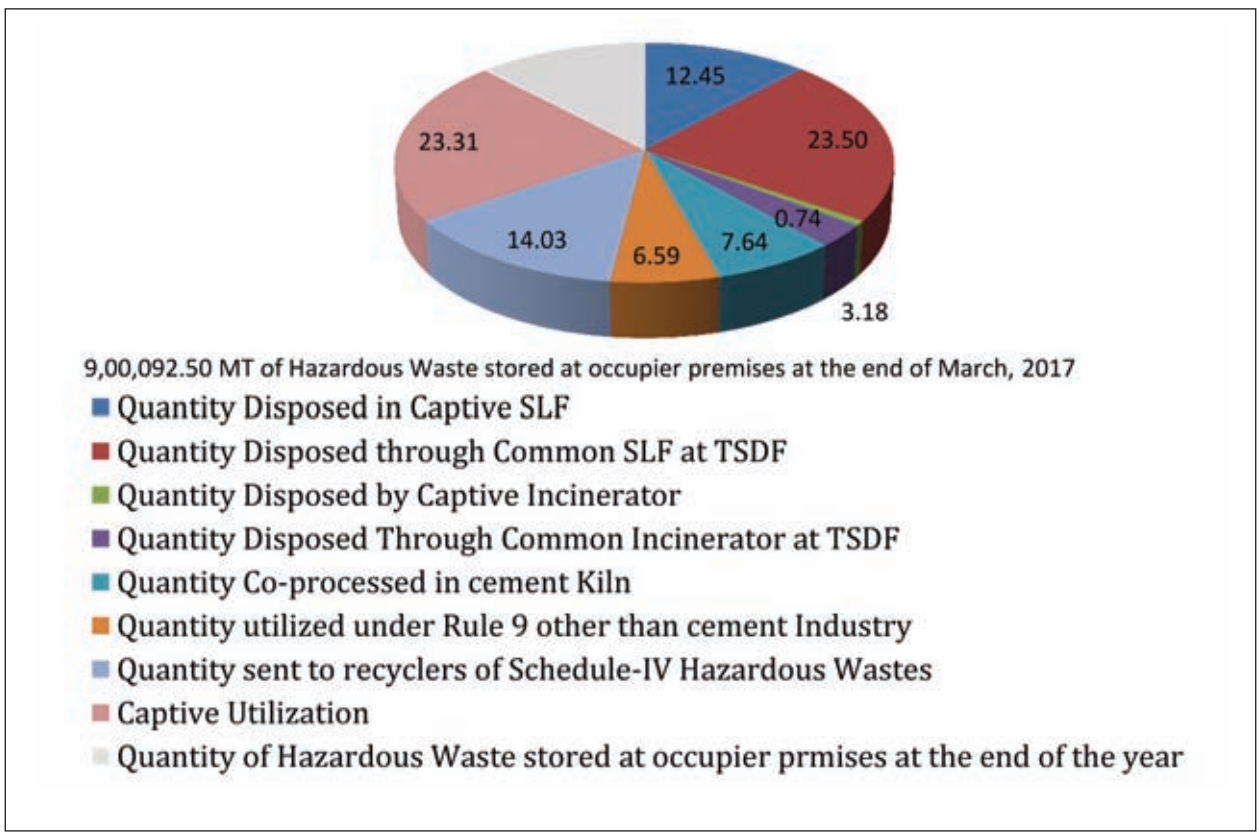
c) Gujarat (39.20%), Rajasthan (10.10%), Odisha (8.30%), Jharkhand (8.07%), Tamil Nadu (5.34%), Maharashtra (5.32%), Karnataka (4.70%), Andhra Pradesh (3.94%), Telangana (3.86%) and Uttar Pradesh (2.60%) are the top 10 hazardous waste generating states, which together contribute about 91% of total hazardous waste generated in the country.

d) There are 1,733 authorized recyclers for recycling of commonly recyclable hazardous wastes (used oil/waste oil/non-ferrous scraps/etc.) listed under Schedule-IV of HWM, Rules, 2016, having authorized capacity of 6.99 Million MT. About 1.00 Million MT of hazardous waste has been recycled during 2016-17, of which 75% has been recycled in Gujarat, Tamilnadu, Telangana, Karnataka and Andhra Pradesh.

e) 65 Cement Plants having authorized capacity of 7.22 Million MT are utilizing hazardous waste in the country by co-processing. Gujarat, Karnataka, Tamil Nadu, Telangana and Rajasthan together contributes more than 86% of total hazardous waste co-processed in cement plant in the country and Gujarat leads with about 53%.

f) Apart from utilization of hazardous waste in cement plants, there are 224 facilities for utilization of various categories of hazardous waste as a resource/energy recovery, having authorized capacity of 2.32 Million MT.

Gujarat, Jharkhand and Odisha together contributes more than 75% of total hazardous waste for utilization (other than Co-processing in cement plant) in the country and Gujarat leads with about 28% followed by Jharkhand with about 25 %.




**State-wise status of Hazardous Waste Generation**

## State-wise Hazardous Waste Generation & its Management

| S. No. | State/UT | No. of Hazardous Waste Generating Industry | Quantity of Hazardous Waste as per Authorization (MTA) | Quantity of Hazardous Waste as per Annual Return (MTA) | Quantity Disposed in Captive SLF (MT) | Quantity Disposed through Common SLF at TSDF (MT) | Quantity Disposed by Captive Incinerator (MT) | Quantity Disposed Through Common Incinerator at TSDF (MT) | Quantity Co-processed in cement Kiln (MT) | Quantity utilized under Rule 9 (MT) | Quantity sent to recyclers of Schedule-IV Hazardous Wastes (MT) | Captive Utilization (MT) | Quantity of Hazardous Waste stored at occupier premises at the end of the year (MT) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Andaman & Nicobar | 0 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| 2 | Andhra Pradesh | 2298 | 976781.2 | 282266.4 | 8399.136 | 140977.4 | 306.19 | 3094.476 | 24775.21 | 7651.84 | 51494.899 | 21555 | 30282.338 |
| 3 | Arunachal Pradesh | INP | INP | INP | INP | INP | INP | INP | INP | INP | INP | INP | INP |
| 4 | Assam | 55 | INP | 29434.64 | 10075.13 | 0.00 | 0.00 | 0.00 | 0.00 | 27178.38 | 4983.51 | 310.82 | 4764.856 |
| 5 | Bihar | 121 | 1253.16 | 7629 | 0.00 | 30 | 0.00 | 48.35 | 4386 | 0.00 | 93.09 | 2262.2 | 9381.429 |
| 6 | Chandigarh | 1167 | 9733.387 | 2846.892 | 0.00 | 69.294 | 0.00 | 11.25 | 0.00 | 0.00 | 2766.35 | 0.00 | 0.00 |
| 7 | Chhattisgarh | 264 | 306430.8 | 65186.14 | 1882.991 | 0.00 | 0.00 | 0.00 | 0.00 | 20618.2 | 16141.11 | 14713.5 | 11830.651 |
| 8 | Daman & Diu | INP | INP | INP | INP | INP | INP | INP | INP | INP | INP | INP | INP |
| 9 | Delhi# | 1136 | INP | 4197.36 | INP | INP | INP | INP | INP | INP | INP | INP | 21,006 |
| 10 | Goa | 1409 | 82730.7 | 24796 | 3499 | 0.00 | 14357.3 | 2695 | 469.9 | 8.335 | 912.5 | 0.00 | 1320.35 |
| 11 | Gujarat | 11200 | 14490351.1 | 2811925.3 | 243493.7 | 708270.5 | 22339.6 | 84940.593 | 289276.1 | 140467.3 | 425746.65 | 468222.3 | 429149.944 |
| 12 | Haryana | 3941 | 64896.63 | 58829.43 | 687.71 | 8308.1 | 4135.4 | 20459.66 | 5089.1 | 3566.246 | 7458.8725 | 0.00 | 9124.1825 |
| 13 | Himachal Pradesh | 3108 | 506523.1 | 29029.38 | 0.00 | 17804 | 0.00 | 0.00 | 1249.88 | 10754.38 | 321.616 | 0.00 | 10.67 |
| 14 | Jammu & Kashmir | 213 | 1043.21 | 1043.21 | 0.00 | 0.00 | 12.3 | 0.00 | 0.00 | 0.00 | 4.26 | 0.00 | 1026.65 |
| 15 | Jharkhand | 562 | 772180.6 | 578788.6 | 3059.01 | 0.00 | 1554.3 | 0.00 | 4341.1 | 0.00 | 12464.64 | 550819.3 | 6550.21 |
| 16 | Karnataka | 3264 | 1337666.8 | 336791.6 | 0 | 33548.1 | 20.21 | 29015.9 | 57796.38 | 98321.97 | 64957.51 | 0.00 | 54552.68 |
| 17 | Kerala | 927 | 40766.69 | 38466.20 | 18805 | 15694.2 | 0.00 | 0.00 | 0.00 | 0.00 | 3711.04 | 0.00 | 253.02 |
| 18 | Lakshadweep | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 19 | Madhya Pradesh | 2222 | 553028.4 | 125880.7 | 3613 | 24879. | 2926.0 | 1400.202 | 23788.19 | 1118.624 | 17452.422 | 36770.3 | 22501.81 |
| 20 | Maharashtra | 6160 | 2359606 | 381686.2 | 0.00 | 296293.1 | 0 | 49211.6 | 0.00 | 6066.465 | 30105.94 | 0.00 | 0.00 |
| 21 | Manipur* | 255 | 336.8 | INP | INP | INP | INP | INP | INP | INP | INP | INP | INP |
| 22 | Meghalaya | 11 | 513.83 | 75.8 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 37.25 | 0.00 | 309.004 |
| 23 | Mizoram | 28 | 14.761 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 14.761 |
| 24 | Nagaland | 2 | 10 | 10 | 0.00 | 0.00 | 0.00 | 0.00 | 0 | 0.00 | 10 | 0.00 | 0.00 |
| 25 | Odisha | 184 | 788974.2 | 595697.8 | 2883.786 | 48692.9 | 83.368 | 0.00 | 31.42 | 73370.15 | 5514.889 | 402729.1 | 131784.73 |
| 26 | Puducherry* | 127 | 93575.68 | INP | 3 | 0.00 | 54.8 | 714 | 1055.69 | 14846 | 10183.19 | 0.00 | 71488.7 |
| 27 | Punjab | 3294 | 221393.3 | 115490.1 | 5814.46 | 20817.4 | 2246.5 | 1734.3 | 418.814 | 42846.3 | 27567.01 | 1150 | 20586.03 |
| 28 | Rajasthan* | 1046 | 1140453.8 | 724663.2 | 505952.3 | 58373.5 | 87.85 | 4116.854 | 33655.51 | 2655.76 | 30868.322 | 63089.6 | 16040.69 |
| 29 | Sikkim | 23 | 785.472 | 785.472 | 0.00 | 785.47 | 0.00 | 785.472 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 30 | Tamil Nadu | 3615 | 702861.2 | 383189.2 | 77004.18 | 62850.2 | 2419.9 | 4848.24 | 55829.8 | 1907.47 | 118975.86 | 30117.5 | 31052.87 |
| 31 | Telangana | 2510 | 525468.9 | 277078.5 | 0.00 | 138791.6 | 0.00 | 5391.3 | 35769.8 | 1156 | 90567.102 | 32.51 | 5371.11 |
| 32 | Tripura | 167 | 270.19 | 270.19 | 4.5 | 0.00 | 4 | 0.00 | 0.00 | 2.46 | 238.63 | 0.00 | 20.6 |
| 33 | Uttarakhand | 3671 | 111809.1 | 24264.09 | 102.44 | 3860.3 | 162.9 | 3600.6 | 922.06 | 342.66 | 9860.87 | 4584.8 | 828.28 |
| 34 | Uttar Pradesh | 2334 | 229322.6 | 186591.5 | 2221.6 | 53417 | 1556.8 | 11734.157 | 1000 | 1109.132 | 46399.417 | 64588.9 | 4564.118 |
| 35 | West Bengal | 1036 | 145322.9 | 85848.74 | 0 | 42303.6 | 206.36 | 3227.479 | 5249.65 | 16204.52 | 21698.68 | 1222.8 | 17856.2 |
| Total | | 56,350 | 25464105 | 71,72,762 | 8,87,501 | 16,75,766 | 52,473 | 2,27,029 | 5,45,102 | 4,70,192 | 10,00,535 | 16,62,168 | 9,01,671.9 |

**Data not validated by respective SPCB/PCC and represent as provided by them*
*# Information not provided as per prescribed format 2016-17. Data shown are not as per annual return by the occupier.*
*N/A: Not applicable; INP: Information not provided*

### Availability of Common Integrated Treatment, Storage & Disposal Facilities (TSDFs) with Common Incinerators & Secured Landfill

| S. No. | Name of the State/UT | Integrated TSDFs (with both SLF and Incinerator) | TSDFs with Only Common Incinerators | TSDFs with only Common Secured Landfills |
|---|---|---|---|---|
| 1 | Andhra Pradesh | 1 | - | - |
| 2 | Gujarat | 4 | 2 | 3 |
| 3 | Haryana | 1 | - | - |
| 4 | Himachal Pradesh | - | - | 1 |
| 5 | Jharkhand | 1* | - | - |
| 6 | Karnataka | - | 6 | 2 |
| 7 | Kerala | - | - | 1 |
| 8 | Madhya Pradesh | 1 | - | - |
| 9 | Maharashtra | 3 | - | 1 |
| 10 | Odisha | - | - | 1 |
| 11 | Punjab | - | - | 1 |
| 12 | Rajasthan | - | 1 | 2 |
| 13 | Tamilnadu | 1 | - | 1 |
| 14 | Telangana | 1 | - | - |
| 15 | UP | 2 | 1 | 1 |
| 16 | Uttarakhand | 1 | - | - |
| 17 | West Bengal | 1 | - | - |
| 18 | Daman, Diu, Dadra & Nagar Haveli | 1 | - | - |
| | **TOTAL** | **18** | **10** | **14** |

*Commissioning of common incinerator is under progress. Jharkhand PCB has issued consent to operate.

### e-Waste (Management) Rules, 2016 and amendments thereof

The E-Waste (Management) Rules, 2016 is being implemented through the principle of Extended Producer Responsibility (EPR). The objective is to take all steps required to ensure that e-waste is managed in a manner which shall protect health and environment against any adverse effects, which may result from such e-waste. For the management of e-waste, the e-waste (Management) Rules, 2016 intends to achieve the following:

- Extended Responsibility to producers to manage a system of E-waste collection and channelization through EPR Authorization.
- To promote and encourage establishment of an efficient e-waste collection mechanism
- Promote Environmentally Safe & Sound Recycling by channelizing E-waste to authorized dismantlers and recyclers of e-waste

- To minimize illegal recycling / recovery operations
- Reduce Hazardous substances in Electrical and Electronic components

The rules were further amended and notified in March 2018 as E-Waste (Management) Amendment Rules, 2018.

Based on information compiled from SPCBs/PCCs there are 280 authorized Recyclers/ Dismantlers in the country with total dismantling/ recycling capacity of about 510950 MT. Further as per e-waste management annual reports submitted by SPCBs/PCCs, a total of 69,414 MT E-Waste has been recycled.

## Extended Producer Responsibility Authorization (EPRA) under the e-Waste Rules:

It is the responsibility of a producer for his electrical and electronic equipment (EEE) at post consumer stage for its collection, storage, transportation, dismantling and recycling. Extended Producer Responsibility (EPR) also includes responsibility of creating awareness and making budgetary provisions for managing of EPR.

For managing their EPR producers prepare EPR Plan, where producers estimate quantity of e-waste generated, outlines his collection mechanism, his dismantling & recycling arrangements, estimates his budget for implementing EPR and awareness plan. Producers may manage their EPR either through Individual Producer Responsibility (IPR) or by engaging a Producer Responsibility Organisation (PRO) or by engaging service providers for collection & channelisation. EPRA is mandatory and has to be obtained by all the producers including importers, e-retailers/on-line sellers/e-bay etc. of EEE covered in E-waste (management) Rules, 2016. Selling or placing of EEE in the market by any Producer without EPRA shall be considered as causing damage to the environment, which would attract penal provisions under E(P) Act, 1986. Under EPRA producers are given collection targets of their generated E-Waste. The targets are calculated as per Schedule III and Schedule-IIIA of the said rules as per applicability. As on March 31, 2019, CPCB has granted EPRA to 1169 Producers and their details along with their collection targets are available at CPCBs website (http://cpcb.nic.in/epr-authorization-status/).

## Registration of Producer Responsibility Organization under amendment Rules, 2018

Under the E-Waste(M) Rules, 2016 a producer has the option of managing its EPR through a Producer Responsibility Organization (PRO). A PRO can collect and channelize e-waste only on behalf of a producer. CPCB has prepared guidelines for role and responsibility of a PRO which is available on its web site at the following link: (http://cpcb.nic.in/uploads/Projects/E-Waste/Guidelines_for_PRO_23.05.2018.pdf). Under, the E-Waste (M) Amendment Rules, 2018 a PRO has to be registered with CPCB. CPCB has so far registered 24 PROs in the year 2018-19 and their details are available at CPCBs website.

CPCB has constituted an advisory committee on Management of E-Waste in the country. The Committee comprises of subject experts, representation from Ministry of Electronic & IT, SPCBs/PCCs and intends to provide guidance on matters related to E-Waste Management, Development of guidelines as and when required.

# Annexure - I

## DELEGATION OF POWERS BY CENTRAL POLLUTION CONTROL BOARD TO POLLUTION CONTROL COMMITTEES

| S. No | Union Territory | Pollution Control Committee | Gazette Notification No. for Power Delegation | Date of Notification |
|---|---|---|---|---|
| 1. | **Andaman & Nicobar Islands** | The Pollution Control Committee Andaman & Nicobar Islands | Gazette of India Extraordinary, Part-II, Section-3, Sub-section (ii) S. O. No. 33 Dated 16.01.1992 & Legal /156(4) 1990 dated 3.06.2004 | 16.01.1992 |
| 2. | **Chandigarh** | Chandigarh Pollution Control Committee | Gazette of India Extraordinary, Part-II, Section-3, Sub-section (ii) S. O. No. 199(E) dated 15.03.1991 & S.O. 1131 (E) dated 23.10.2002 | 15.03.1991 |
| 3. | **Daman Diu & Dadra Nagar Haveli** | Pollution Control Committee Daman Diu & Dadra Nagar Haveli | Gazette of India Extraordinary, Part-II, Section-3, Sub-section (ii) S. O. No. 862 (E) dated 26.11.1992; amended vide notification No. S.O. 384 (E) dated 19.2.1996 and S.O. 698(E) dated 03.07.1998 File No. B-12015/7/04/AS, dated 17.12.2004 | 26.11.1992 |
| 4. | **Delhi** | Delhi Pollution Control Committee | Gazette of India Extraordinary, Part-II, Section-3, Sub-section (ii) S. O. No. 198 (E) dated 15.03.1991; amended vide Notification No. S.O. 640 (E) dated14.06.2002 | 15.03.1991 |
| 5. | **Lakshadweep** | Lakshadweep Pollution Control Committee | Gazette of India Extraordinary, Part-II, Section-3, Sub-section (ii) S. O. No 842 (E) dated 31.08.1988 & legal /156(4) 1990 dated 23.03.2006 | 31.08.1988 |
| 6. | **Puducherry** | Puducherry Pollution Control Committee | Gazette of India Extraordinary, Part-II, Section-3, Sub-section (ii) S. O. No. 787 (E) dated 10.03.1992; amended vide Notification No. F.No. Legal/158/(4)/90 dated 01.05.2011 | 10.03.1992 |

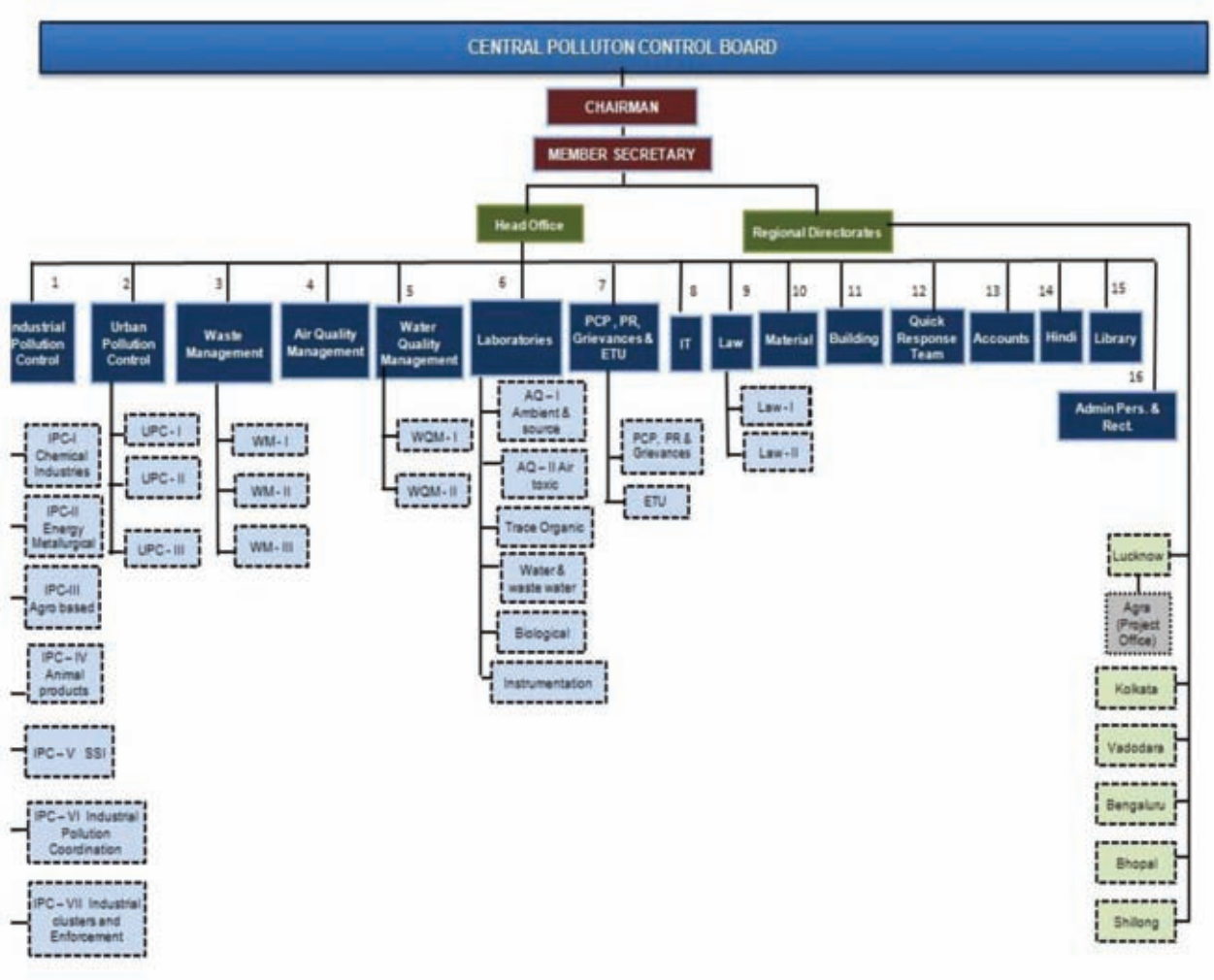
# Annexure - II

## LIST OF CPCB BOARD MEMBERS
## (AS ON 31.03.2019)

| S. No. | Name & Address |
|---|---|
| 1. | Shri S.P.S. Parihar, IAS<br>Chairman, CPCB |
| 2. | The Additional Secretary and Financial Adviser<br>MoEF&CC |
| 3. | The Joint Secretary (SBM and PHE)<br>Ministry of Housing and Urban Affairs |
| 4. | The Joint Secretary (Thermal)<br>Ministry of Power |
| 5. | The Executive Director (Technical)<br>NMCG - MoWR, RD&GR |
| 6. | The Joint Secretary, CP Division<br>MoEF&CC |
| 7. | The Chairman<br>Uttar Pradesh Pollution Control Board |
| 8. | The Chairman<br>Maharashtra Pollution Control Board |
| 9. | The Chairman<br>Tamil Nadu Pollution Control Board |
| 10. | The Chairman<br>Assam Board for Prevention and Control of Water and Air Pollution |
| 11. | The Mayor<br>Municipal Corporation, Indore, MP |
| 12. | Shri Ashok Agarwal<br>Director, GridLynk Solar LLP, Haryana |
| 13. | Dr. Anil Kumar Gupta<br>Chairman, Jhilmil and Friends Colony Industrial Area, Delhi |
| 14. | Dr. T.K. Joshi, Advisor (Environmental Health)<br>MoEF&CC |
| 15. | The Director (Operations)<br>NTPC Ltd, New Delhi |
| 16, | Director (Research and Development)<br>IOC Limited, Faridabad, Haryana |
| 17. | Dr. Prashant Gargava<br>Member Secretary, CPCB |

# Annexure - III

## ORGANIZATION STRUCTURE OF CENTRAL POLLUTION CONTROL BOARD



# Annexure - IV

## SANCTIONED STAFF STRENGTH IN CPCB AND NUMBER OF VACANCIES IN EACH CADRE AS ON 31.03.2019

| Sl. No. | Name of the Post | Sanctioned Posts as on date | Deemed Abolished | Filled | Vacant Post |
|---|---|---|---|---|---|
| 1. | Scientist 'F' | 01 | | 01 | |
| 2. | Scientist 'E' | 49 | | 49 | |
| 3. | Scientist 'D' | 57 | | 57 | |
| 4. | Scientist 'C' | 21 | | 21 | |
| 5. | Scientist 'B' | 39 | 01 | 23 | 15 |
| 6. | Senior Law Officer | 01 | - | - | 01 |
| 7. | Sr. Administrative Officer | 01 | - | 01 | - |
| 8. | Administrative Officer | 07 | - | 07 | - |
| 9. | Law Officer | 02 | - | 02 | - |
| 10. | Assistant Law Officer | 02 | - | 02 | - |
| 11. | Assistant Director (OL) | 01 | - | - | 01 |
| 12. | Accounts Officer | 02 | - | 02 | 00 |
| 13. | Assistant Accounts Officer | 05 | - | 04 | 01 |
| 14. | Assistant Technical Officer | 01 | - | - | 01 |
| 15. | Section Officer* | 09 | - | 06 | 03 |
| 16. | Private Secretary* | 18 | 1 | 13 | 04 |
| 17. | Senior Technical Supervisor | 09 | - | 08 | 01 |
| 18. | Draughting Supervisor | 01 | - | 01 | - |
| 19. | Senior Scientific Assistant | 32 | - | 31 | 01 |
| 20. | Senior Hindi Translator | 01 | - | 01 | - |
| 21. | Technical Supervisor | 07 | - | 01 | 06 |
| 22. | Assistant* | 18 | - | 17 | 01 |
| 23. | Data Processing Assistant | 04 | - | 04 | - |
| 24. | Senior Draughtsman | 01 | - | 01 | - |
| 25. | Personal Assistant * | 03 | - | 03 | - |
| 26. | Accounts Assistant | 08 | - | 05 | 03 |
| 27. | Junior Hindi Translator | 01 | - | 01 | - |
| 28. | Publication Assistant | 01 | - | 01 | - |
| 29. | Junior Scientific Assistant | 27 | - | 22 | 05 |
| 30. | Senior Technician | 07 | - | 04 | 03 |

| Sl. No. | Name of the Post | Sanctioned Posts as on date | Deemed Abolished | Filled | Vacant Post |
|---|---|---|---|---|---|
| 31. | Junior Technician | 07 | - | 05 | 02 |
| 32. | Senior Laboratory Assistant | 29 | - | 29 | 00 |
| 33. | Junior Laboratory Assistant | 31 | - | 26 | 05 |
| 34. | Field Attendant | 07 | - | 07 | - |
| 35. | Upper Division Clerk | 24 | - | 15 | 09 |
| 36. | Lower Division Clerk | 20 | 6 | 07 | 07 |
| 37. | Senior Attendant | 15 | - | 15 | - |
| 38. | Driver Special Grade | 01 | - | 01 | - |
| 39. | Driver Grade-I | 06 | - | 05 | 01 |
| 40. | Driver Grade-II* | 02 | - | 02 | - |
| 41. | Driver (Ordinary Grade)* | 10 | - | 09 | 01 |
| 42. | Data Entry Operator Grade-I | 02 | - | 02 | - |
| 43. | Data Entry Operator Grade-II | 06 | - | 04 | 02 |
| 44. | Stenographer | 03 | - | 03 | - |
| 45. | Pump & Wheel Valve Operator | 01 | - | 01 | - |
| 46. | Attendant (MTS) | 22 | - | 19 | 03 |
| | Total | 522 | 08 | 438 | 76 |

Two posts of PS adjusted to the post of PA (Sl. No. 16 & 25) & one post of Section Officer adjusted to the post of Assistant (Sl. No. 15 & 22) 02 posts of Driver Grade-II adjusted to Driver (Ordinary Grade) (vide Sl. No. 40, and 41) under GFR - 254.


**Central Pollution Control Board**
Ministry of Environment, Forest & Climate Change
'Parivesh Bhawan', East Arjun Nagar
Delhi - 110032