

NATIONAL AMBIENT AIR QUALITY MONITORING  
NAAQMS/45/2019-2020

# NATIONAL AMBIENT AIR QUALITY STATUS & TRENDS 2019



**CENTRAL POLLUTION CONTROL BOARD**  
Ministry of Environment, Forest & Climate Change  
GOVERNMENT OF INDIA

website : [www.cpcb.nic.in](http://www.cpcb.nic.in)

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## केन्द्रीय प्रदूषण नियंत्रण बोर्ड

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CENTRAL POLLUTION CONTROL BOARD

MINISTRY OF ENVIRONMENT, FOREST & CLIMATE CHANGE, GOVT. OF INDIA

## FOREWORD

Central Pollution Control Board (CPCB) implements the National Ambient Air Quality Monitoring Programme (NAMP) through a network comprising 804 ambient air quality monitoring stations covering 344 cities/towns in 28 states and 6 union territories of the country as per the mandate under the Air (Prevention and Control of Pollution) Act, 1981 to collect, compile and disseminate information on air quality.

Under the programme, ambient air quality is monitored in collaboration with State Pollution Control Boards (SPCBs), Pollution Control Committees (PCCs), and National Environmental Engineering Research Institute (NEERI). The data, thus generated, is transmitted to CPCB for scrutiny, analysis, compilation and its publication. The present report contains ambient air quality data for the calendar year 2019 and its analysis has been carried out in terms of exceedance in comparison to National Ambient Air Quality Standards. The concentration values for SO<sub>2</sub>, NO<sub>2</sub>, PM<sub>10</sub> & PM<sub>2.5</sub> is also analysed and presented separately for zones, coastal towns, industrial cities, million plus cities, non-attainment cities, ecologically sensitive areas etc.

The contribution made by my colleagues Sh. V. K. Shukla, Additional Director, Sh. Tarun Darbari, Scientist 'D', Sh. S. K. Sharma, Scientist 'D' and Sh. Fasiur Rehman, Scientist 'C' in preparing the report under the supervision of Dr. Prashant Gargava, Member Secretary is appreciated. Cooperation extended by SPCBs and PCCs, other collaborating agencies, and Regional Directorates of CPCB are gratefully acknowledged.

Hope the report shall be of use to all concerned.

(Shiv Das Meena)

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## ABBREVIATION

| <b>Abbreviation</b>           | <b>Full Form</b>   |
|-------------------------------|--|
| AAQMS                         | Ambient Air Quality Monitoring Stations  |
| AD                            | Adequate Data ( <i>locations where ≥50 days of monitoring was done in a year</i> )       |
| As                            | Arsenic  |
| AQI                           | Air Quality Index  |
| B(a)P                         | Benzo (a) Pyrene   |
| C                             | Critical pollution category  |
| C <sub>6</sub> H <sub>6</sub> | Benzene  |
| CNG                           | Compressed Natural Gas   |
| CO                            | Carbon monoxide  |
| CPA                           | Critically Polluted Area   |
| CPCB                          | Central Pollution Control Board  |
| CPCB RD                       | CPCB Regional Directorate  |
| E                             | Exceeding NAAQS  |
| EAQDES                        | Environmental Air Quality Data Entry System  |
| EDB                           | Environmental Data Bank  |
| ESA                           | Ecologically Sensitive Area  |
| EF                            | Exceedence Factor  |
| GRAP                          | Graded Response Action Plan  |
| H                             | High pollution category  |
| H <sub>2</sub> S              | Hydrogen Sulphide  |
| ID                            | Inadequate Data ( <i>locations &lt; 50 days of monitoring was done in a year</i> )       |
| L                             | Low pollution category   |
| LPG                           | Liquefied Petroleum Gas  |
| M                             | Moderate pollution category  |
| NAAQS                         | National Ambient Air Quality Standards   |
| NAMP                          | National Air Quality Monitoring Programme  |
| NCR                           | National Capital Region  |
| ND                            | No Data ( <i>Monitoring not done or data not received for the particular parameter</i> ) |
| NEERI                         | National Environmental Engineering Research Institute                                    |
| NH <sub>3</sub>               | Ammonia  |
| NHAI                          | National Highways Authority of India   |
| Ni                            | Nickel   |
| NM                            | No Monitoring  |
| NO <sub>2</sub>               | Nitrogen Dioxide   |
| O <sub>3</sub>                | Ozone  |
| OG                            | Outgrowth  |
| PAHs                          | Polycyclic Aromatic Hydrocarbons   |
| Pb                            | Lead   |
| PCCs                          | Pollution Control Committees   |
| PUC                           | Pollution Under Control  |
| PM <sub>10</sub>              | Particulate Matter of size ≤ 10µm  |
| PM <sub>2.5</sub>             | Particulate Matter of size ≤ 2.5µm   |
| QA/QC                         | Quality Assurance / Quality Control  |
| R/I/Ru/O                      | Residential / Industrial / Rural / Other areas   |
| RSPM                          | Respiratory Suspended Particulate Matter   |
| SO <sub>2</sub>               | Sulphur Dioxide  |
| SPCB                          | State Pollution Control Boards   |
| SUVs                          | Sport Utility Vehicles   |
| UA                            | Urban Agglomeration  |
| USEPA                         | United States Environmental Protection Agency  |
| UTs                           | Union Territories  |
| VOCs                          | Volatile Organic Compounds   |

## 1.0 INTRODUCTION

### 1.1 Importance of good air quality

Air quality is a measure of the suitability of air for breathing by people, plants and animals. On average, a person inhales about 14,000 litres of air every day. Therefore, poor air quality may affect the quality of life now and for future generations by affecting the health, the environment, the economy and the city's livability.

Good outdoor air quality is fundamental to our well-being. A healthy environment is therefore, an essential aspect of the right to life, not only for human beings but also for other animals on the planet. Violation, therefore, of the right to healthy environment is potentially a violation of the basic right to life.

### 1.2 Air pollution

The **atmosphere** of Earth is a layer of gases surrounding the planet Earth that is retained by Earth's gravity. The atmosphere protects life on Earth by absorbing ultraviolet solar radiation, warming the surface through heat retention (greenhouse effect), and reducing temperature extremes between day and night (diurnal temperature variation). The common name given to the atmospheric gases used in breathing and photosynthesis is air. By volume, dry air contains 78.09% nitrogen, 20.95% oxygen, 0.93% argon, 0.039% carbon dioxide, and small

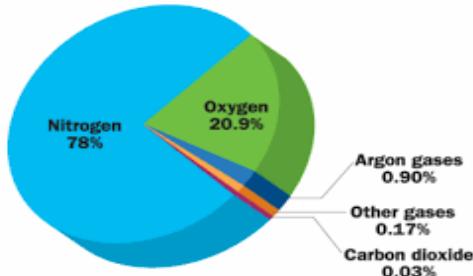
Air pollution has been defined as the presence in the atmosphere of any air pollutant. Air pollutant is any solid liquid or gaseous substance present in the atmosphere in such concentration as may be or tend to be injurious to human beings or other living creatures or plants or property or environment.

The highest air pollution exposure occurs in the indoor environment. Toxicity can be defined as the relative ability of a substance to cause adverse effects in living organism. The concentration of pollutants in the air, water & soil that results from these emissions influences the magnitude of human exposures through organs such as the nose, mouth & skin.

CPCB initiated the National Ambient Air Quality Monitoring Programme in 1984 and notified the revised National Ambient Air Quality Standards in 2009. Presently, there are 804 stations covering 344 cities/towns/villages in 28 states & 6 UT. Under NAMP, three air pollutants viz: SO<sub>2</sub>, NO<sub>2</sub> & PM<sub>10</sub> are monitored regularly at all location. Monitoring is being carried out with the help of SPCBs, PCCs, NEERI & CPCB Head Office & its Regional Directorates. The policy decision in the country related to air pollution are being taken based on the results obtained by CPCB through its air quality monitoring programme.

amounts of other gases. (Figure 1.1). Rapid urbanization and industrialization has added other elements/compounds to the pure air and thus caused the increase in pollution. 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.

**Figure 1.1: Composition of dry air in the lower atmosphere of the Earth**



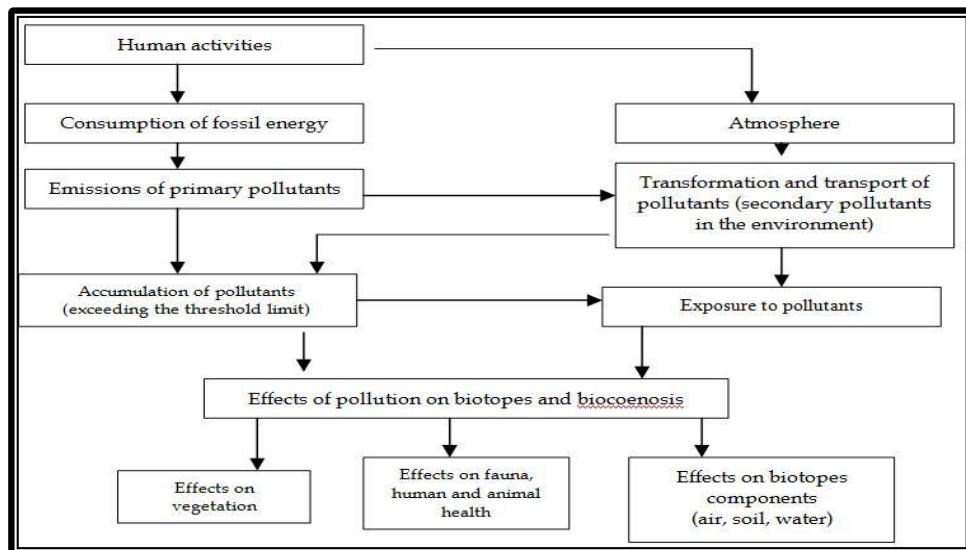
### 1.3 Air Pollution and Health

Air pollution is a major environmental health problem affecting the developing and the developed countries alike. The effects of air pollution on health are very complex as there are many different sources and their individual effects are synergistic and additive. It is not only the ambient air quality in the cities but also the indoor air quality in the rural and the urban areas that are causing concern. In fact, in the developing world the highest air pollution exposures occur in the indoor environment. Air pollutants that are inhaled have serious impact on human health affecting the lungs and the respiratory system; they are also taken up by the blood and circulated in the body. These pollutants are also deposited on soil, plants, and in the water, further contributing to human exposure. The sources and effects of some air pollutants is given in [Annexure 1](#). Toxicity can be defined as the relative ability of a substance to cause adverse effects in living organisms. This relative ability is dependent upon several conditions.

- Route of entry
- Quantity or the dose of the substance determines whether the effects of the chemical are toxic, nontoxic or beneficial.
- Duration and frequency of exposure
- Concentrations that are actually measured in the environment
- Variations between different species (interspecies) and variations among members of the same species (intra species)

To understand and control the effect of pollutants effectively, it is necessary to understand the pathway from source to effect as measurement and control can occur at any of the places along the pathway. However, effective control measurement can be taken only at the source.

**Figure 1.2: Flow of atmospheric pollutants**



The environmental exposure pathway provides an analytical framework to describe, in broad terms, the connections between pollutant sources and human health outcomes. This framework begins with the emission source, in this case a well pad and associated infrastructure, which emit a variety of contaminants into the air, water, and soil. The concentrations of pollutants in the air, water, and soil that result from these emissions influence the magnitude of human exposures through organs such as the nose, mouth, and skin. Once the level of exposure is identified, it is then possible to estimate the dose, or how much of the pollutant is ingested in a given period of time. The dose, in turn, determines the health outcome.

## 1.4 National Ambient Air Quality Standards (NAAQS)

The objectives of air quality standards are:

- To indicate the levels of air quality necessary with an adequate margin of safety to protect the public health, vegetation and property;
- To assist in establishing priorities for abatement and control of pollutant level;
- To provide uniform yardstick for assessing air quality at national level;
- To indicate the need and extent of monitoring programme.

In order to combat air pollution, it is required to identify the pollutants, its source of emission and investigate the effects of living and the environment. The Central Pollution Control Board has notified the revised National Ambient Air Quality Standards Gazette of India, Extra-ordinary Part-II Section 3, sub section (ii), dated Nov 18, 2009. The revised National Ambient Air Quality Standards is depicted in **Annexure 2**.

## 1.5 National Air Quality Monitoring Programme (N.A.M.P.)

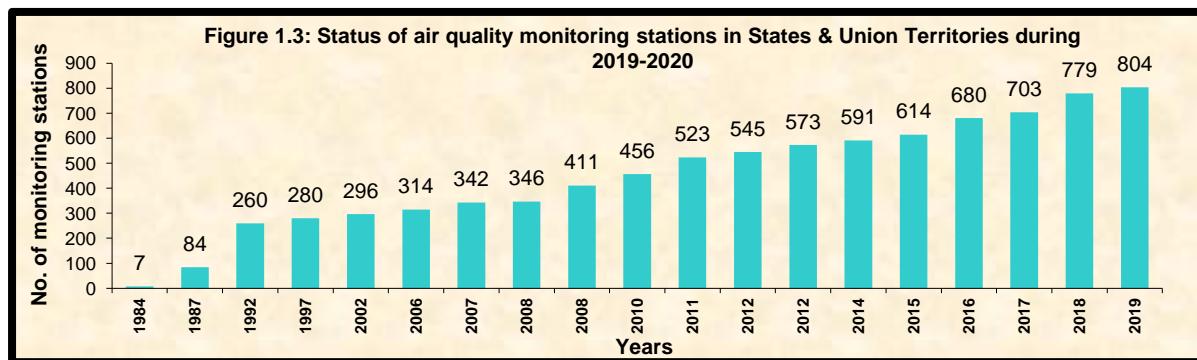
### 1.5.1 Importance of air quality monitoring

Air pollutant, both indoor and outdoor, cause significant harm to health. Therefore, monitoring of pollutants is important for effective air quality management. The Government monitors air quality in different areas to find out how much pollution is in the air and make sure pollutant levels are meeting health - based air quality standards. Knowing how much pollution is in the air in a certain area helps air quality agencies know when and how to take action to protect public health. The Government uses its air monitoring data to:

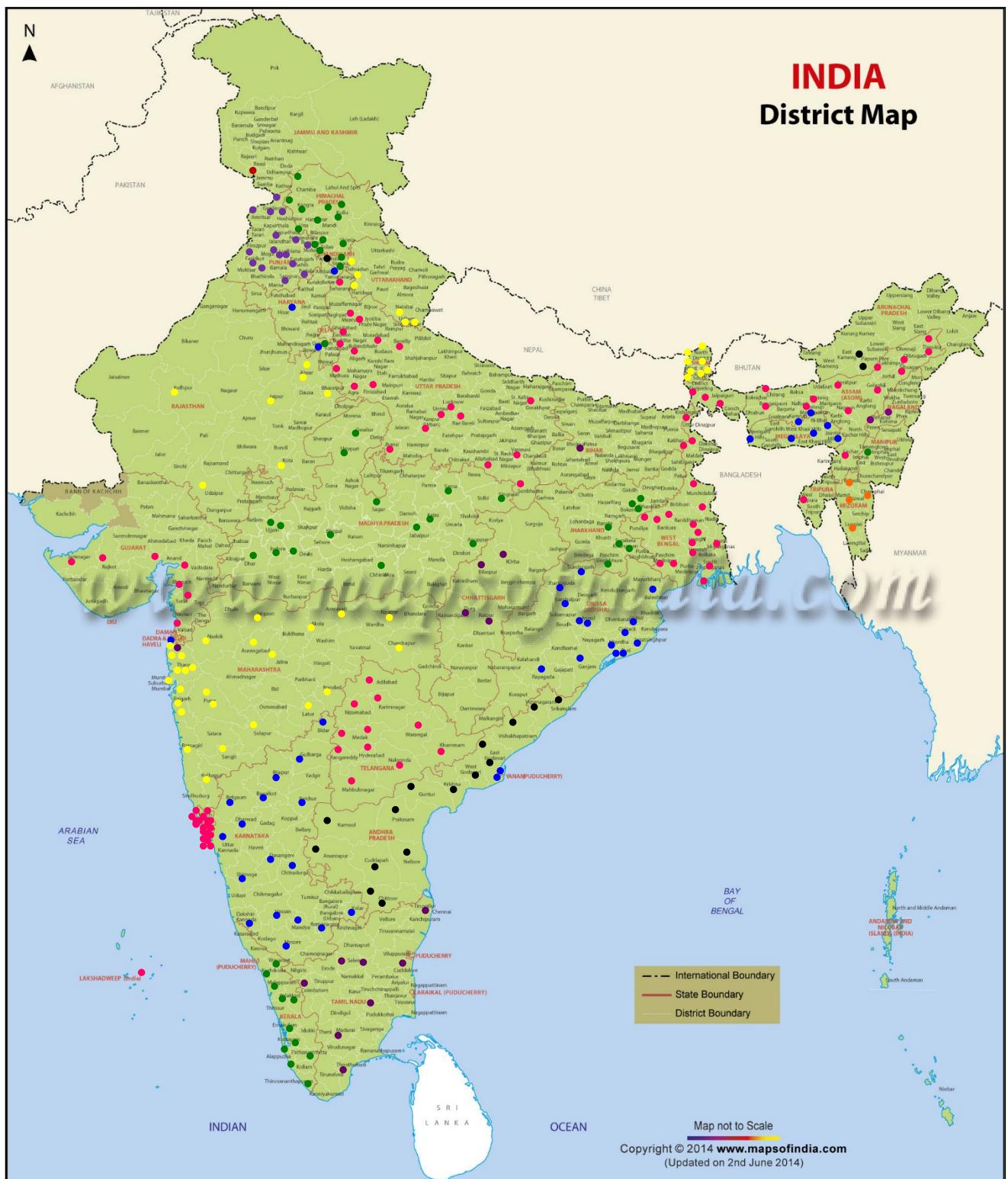
- Determine if air quality is meeting national standards
- Determine the highest pollutant concentrations
- Understand how pollutants behave and their relationship with the weather.
- validate pollution modelling, used to test 'what if' scenarios.
- Forecast air quality
- Evaluate the effectiveness of air pollution control programs
- Evaluate the effects of air pollution on public health
- Track the progress of plans for meeting air quality standard
- Determine air quality trends
- Develop responsible and cost-effective pollution control strategies and policy decisions

### 1.5.2 Present status of NAMP

Central Pollution Control Board initiated National Ambient Air Quality Monitoring (NAAQM) programme in the year 1984 with 7 stations at Agra and Anpara. Subsequently the programme was renamed as National Air Quality Monitoring Programme (NAMP). Steadily the air quality monitoring network got strengthened, in year 2019 the number of stations was raised to **804 covering 344 cities/towns/villages in 28 states and 6 Union Territories as on 31<sup>st</sup> December 2019** (Annexure). The growth in number of stations under operation is given in Figure 1.3. Figure 1.4 shows the distribution of cities with ambient air quality monitoring stations under NAMP.



## **INDIA District Map**



Source of base map: District Maps of India, State Wise Districts of India. [mapsofindia.com](https://mapsofindia.com). <https://in.pinterest.com/pin/223983781438626362/>

- The different coloured dots represent the approximate distribution of cities with manual ambient air quality stations under NAMP

### **1.5.3 Objectives of NAMP**

The objectives of the NAMP are as follows:

- To determine status and trends of ambient air quality;
- To ascertain whether the prescribed ambient air quality standards are violated;
- To Identify Non-Attainment Cities;
- To obtain the knowledge and understanding necessary for developing preventive and corrective measures;
- To understand the natural cleansing process undergoing in the environment through pollution dilution, dispersion, wind based movement, dry deposition, precipitation and chemical transformation of pollutants generated.

### **1.5.4 Parameters monitored under NAMP**

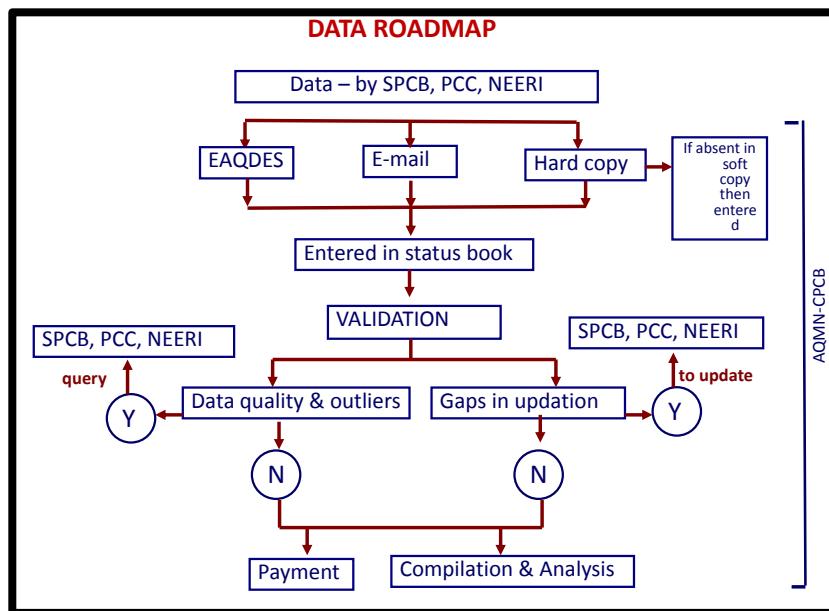
To check air quality of the country, Central Pollution Control Board initiated National Air Quality Monitoring Programme (NAMP) under which three air pollutants viz., Sulphur Dioxide ( $\text{SO}_2$ ), Nitrogen Dioxide ( $\text{NO}_2$ ) and Particulate Matter size equal to or less than 10 micron ( $\text{PM}_{10}$ ), have been monitored regularly at all the locations. Other parameters like  $\text{PM}_{2.5}$  (Particulate Matter having an aerodynamic diameter less than or equal to  $2.5 \mu\text{m}$ ), Carbon monoxide (CO), Ammonia ( $\text{NH}_3$ ), Lead (Pb), Ozone ( $\text{O}_3$ ), Benzene ( $\text{C}_6\text{H}_6$ ), Benzo(a)pyrene (BaP), Arsenic (As) and Nickel (Ni) are being monitored at selected locations and are slowly being added to the monitoring network under NAMP.

The monitoring of meteorological parameters such as wind speed and direction, relative humidity and temperature were also integrated with the monitoring of air quality and are monitored at selected locations. The monitoring of regular parameters is carried out for 24 hours (4-hourly sampling for gaseous pollutants and 8-hourly sampling for particulate matter) with a frequency of twice a week, to have 104 observations in a year.

The monitoring under the NAMP is being carried out with the help of State Pollution Control Boards (SPCB), Pollution Control Committees (PCC), National Environmental Engineering Research Institute (NEERI), Nagpur and Central Pollution Control Board (CPCB) Head Office and its Regional Directorates. CPCB co-ordinates with these agencies to ensure uniformity, consistency of air quality data and provides technical and financial support to them for operating the monitoring station.

### **1.5.5 Data Analysis, Processing and Limitations**

The samples collected at the monitoring stations, following the guidelines of NAMP, are then analyzed in the laboratories of the State Boards and different agencies as per the methods of measurement given in the NAAQS. The data generated are entered into an online system of CPCB known as Environment Air Quality Data Entry System (EAQDES) by respective SPCBs and PCCs. The data is then scrutinized for outliers and gaps in input of data by CPCB. In case of any gaps, the matter is discussed with the respective agencies and later the data is checked, scrutinized, compiled, processed and analyzed statistically to get the information on the annual mean, standard deviation etc. of the pollutants and payment is also made to the respective agencies. Figure 1.5 shows the data flow in NAMP.

**Figure 1.5: Data flow in NAMP**

As NAMP is being operated through various monitoring agencies, a large number of personnel and equipments are involved in the sampling, chemical analyses, data reporting etc. This increases the probability of personal biases reflecting in the data. Hence, it is pertinent to mention that this document be referred keeping in view the above facts and the data be considered more as indicative rather than absolute. The data presented in this report is average over the entire year as available.

#### **1.5.6 Quality Assurance/Quality Control of Data and Management**

The policy decisions in the country related to air pollution are being taken based on the results obtained by CPCB through its air quality monitoring programme. It is therefore, of utmost important to keep a quality check on the data generated so that the data is of acceptable quality. In order to ensure the quality of data, CPCB is carrying out various exercises as follows:

**Evaluation of Ambient Air Quality Monitoring Stations:** Officials from CPCB Regional Directorates regularly visit monitoring stations and monitoring laboratories to ensure proper methodology for sampling and analysis. The findings of the inspection report are communicated to respective monitoring agencies for implementation

**Review Meetings:** CPCB conducts review meetings with monitoring agencies to discuss various problems related to monitoring activities and sort out the remedial measures

**Training Program on Ambient Air Quality Monitoring and data entry:** CPCB carries out training program on ambient air quality monitoring and data entry in the Environmental Air Quality Data Entry System (EAQDES) with an objective to improve quality of data generated under National Air Quality Monitoring Programme (NAMP).

## 2.0 Major Findings

Air Quality Assessment and major findings of the ambient air quality monitoring carried out countrywide during the calendar year 2019 is presented in this chapter. The air quality of different cities/towns has been compared with the respective NAAQS.

### 2.1 Assessment of ambient air quality of the country for 2019 with respect to annual and 24-hourly averages.

This report represent the air quality scenario with air quality data from **January – December 2019** of 787 ambient air quality monitoring stations / locations from residential

Ambient air quality data from January to December, 2019 of 804 monitoring sites in 344 cities across the country and air quality scenario of PM<sub>2.5</sub> of 317 locations across 147 cities.

/ commercial / industrial / rural area and 17 stations from ecologically sensitive area {List of Ecologically Sensitive Area Notified by Ministry of Environment and Forests under Section 3(2)(V) of Environment (Protection) Act, 1986 and Rule 5(3)(d) of Environment (Protection) Rules, 1986} ie a **total of 804 manual stations covering 344 cities, 28 states and 6 UTs**. However, **PM<sub>2.5</sub> is monitored in 317 manual stations covering 147 cities in 20 states and 4 UTs**. The detail of data generated as per the notification under NAMP is given in Table 2.1 and 2.2.

Out of 787 air quality monitoring stations from residential / industrial / rural and other area, adequate data on annual average concentration (with 50 and more days of monitoring) was received from 717 stations for SO<sub>2</sub> and 718 stations for NO<sub>2</sub> and 731 stations for PM<sub>10</sub> and 197 stations for PM<sub>2.5</sub>. In case of Ecologically Sensitive Area, out of a total of 17 stations, adequate data was received from 17 stations for SO<sub>2</sub>, NO<sub>2</sub> and PM<sub>10</sub> and 4 stations for PM<sub>2.5</sub>.

The detail of number of stations for which data was adequate or inadequate is given in Table 2.1.

**Table 2.1: Details of data generated in monitoring stations / locations (Annual)**

| Data type  | Number of monitoring stations                  |                 |                  |                   |                             |                 |                  |                   |
|--|--|-----------------|------------------|-------------------|-----------------------------|-----------------|------------------|-------------------|
|  | Residential / industrial / rural / other areas |                 |                  |                   | Ecologically sensitive area |                 |                  |                   |
|  | SO <sub>2</sub>                                | NO <sub>2</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> | SO <sub>2</sub>             | NO <sub>2</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> |
| <b>Adequate data (AD); (<math>\geq 50</math> days mon)</b>   | 717  | 718             | 731              | 197               | 17                          | 17              | 17               | 4                 |
| <b>Inadequate data (ID); (<math>&lt; 50</math> days mon)</b> | 41   | 32              | 27               | 114               | 0                           | 0               | 0                | 2                 |
| <b>No data (ND)</b>  | 29   | 37              | 29               | 0                 | 0                           | 0               | 0                | 0                 |
| <b>Total monitoring stations (AD+ID+ND)</b>                  | <b>787</b>                                     | <b>787</b>      | <b>787</b>       | <b>311</b>        | <b>17</b>                   | <b>17</b>       | <b>17</b>        | <b>6</b>          |

Key: Adequate data (taken for calculation), annual: locations where  $\geq 50$  days of monitoring was done in a year; Inadequate data (taken for calculation): locations  $< 50$  days of monitoring were done in a year;

Out of 339 cities monitoring ambient air quality from residential / industrial / rural and other area, adequate data on annual average concentration (with 50 and more observations of monitoring) was received from 309 cities for SO<sub>2</sub> and 310 cities for NO<sub>2</sub> and 316 cities for PM<sub>10</sub> and 116 cities for PM<sub>2.5</sub>. In case of Ecologically Sensitive Area out of a total of 5 cities, adequate data was received from all 5 cities for SO<sub>2</sub>, NO<sub>2</sub> and PM<sub>10</sub> and 1 city for PM<sub>2.5</sub>. The detail of number of cities for which data was adequate or inadequate is given in Table 2.2.

**Table 2.2: Details of data generated in monitoring cities (Annual)**

| Data type                                | Number of cities                               |                 |                  |                   |                             |                 |                  |                   |
|--|--|-----------------|------------------|-------------------|-----------------------------|-----------------|------------------|-------------------|
|  | Residential / industrial / rural / other areas |                 |                  |                   | Ecologically sensitive area |                 |                  |                   |
|  | SO <sub>2</sub>                                | NO <sub>2</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> | SO <sub>2</sub>             | NO <sub>2</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> |
| Adequate data (AD)                       | 309  | 310             | 316              | 116               | 5                           | 5               | 5                | 1                 |
| Inadequate data (ID)                     | 15   | 14              | 11               | 30                | 0                           | 0               | 0                | 0                 |
| No data (ND)                             | 15   | 15              | 12               | 0                 | 0                           | 0               | 0                | 0                 |
| <b>Total monitored cities (AD+ID+ND)</b> | <b>339</b>                                     | <b>339</b>      | <b>339</b>       | <b>146</b>        | <b>5</b>                    | <b>5</b>        | <b>5</b>         | <b>1</b>          |

Key: Adequate data (taken for calculation), annual: cities where ≥50 days of monitoring was done in a year; Inadequate data (taken for calculation): cities < 50 days of monitoring were done in a year;

### 2.1.1 Locations / monitoring stations exceeding the NAAQS

Number of monitoring stations / locations exceeding NAAQS on the basis of annual average data is presented in Table 2.3, Figure 2.1. In residential/industrial/rural area, 91 (13%) stations for NO<sub>2</sub>, 577 (79%) stations for PM<sub>10</sub> and 72 (37%) stations for PM<sub>2.5</sub> exceed NAAQS. In ecologically sensitive area, 3 (18%) stations for SO<sub>2</sub>, 5 (29%) stations for NO<sub>2</sub>, 17 (100%) stations for PM<sub>10</sub>, and 4 (100%) stations for PM<sub>2.5</sub> exceed NAAQS.

In 2019, SO<sub>2</sub> was within the NAAQS in all the location except for 3 locations. NO<sub>2</sub>, exceeded in 96 locations, PM<sub>10</sub> in 594 cities and PM<sub>2.5</sub> in 76 locations.

Taking cities into consideration, SO<sub>2</sub> was within the NAAQS in all the cities except for one city. NO<sub>2</sub>, exceeded in 30 cities, PM<sub>10</sub> in 251 cities and PM<sub>2.5</sub> in 40 cities.

**Table 2.3. Number of sampling sites exceeding the annual NAAQS  
(Based on annual average concentration)**

| Data type   | Number of monitoring stations / locations      |                 |                  |                   |                             |                 |                  |                   |
|---|--|-----------------|------------------|-------------------|-----------------------------|-----------------|------------------|-------------------|
|   | Residential / industrial / rural / other areas |                 |                  |                   | Ecologically sensitive area |                 |                  |                   |
|   | SO <sub>2</sub>                                | NO <sub>2</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> | SO <sub>2</sub>             | NO <sub>2</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> |
| Not exceeding NAAQS (NE)                              | 717  | 627             | 154              | 125               | 14                          | 12              | 0                | 0                 |
| Exceeding NAAQS (E)                                   | 0  | 91              | 577              | 72                | 3                           | 5               | 17               | 4                 |
| Inadequate data (ID)                                  | 41   | 32              | 27               | 114               | 0                           | 0               | 0                | 2                 |
| No data (ND)  | 29   | 37              | 29               | 0                 | 0                           | 0               | 0                | 0                 |
| <b>Total monitoring stations (NE, E, ID &amp; ND)</b> | <b>787</b>                                     | <b>787</b>      | <b>787</b>       | <b>311</b>        | <b>17</b>                   | <b>17</b>       | <b>17</b>        | <b>6</b>          |

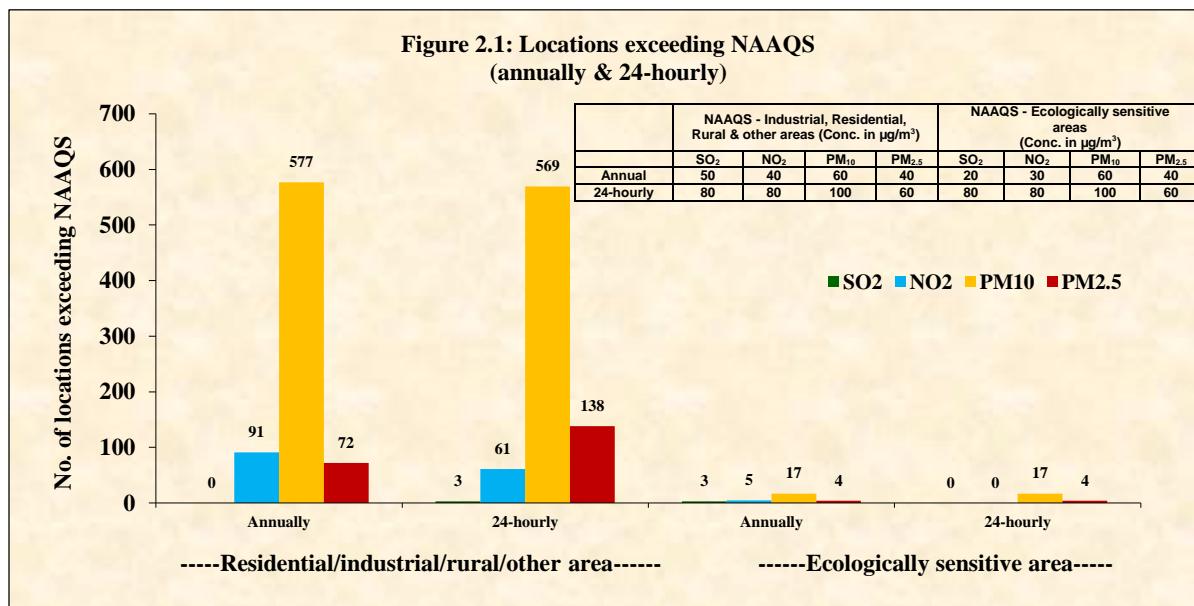
NAAQS (annual): SO<sub>2</sub>=50 µg/m<sup>3</sup>, NO<sub>2</sub>=40 µg/m<sup>3</sup>, PM<sub>10</sub>=60 µg/m<sup>3</sup>, PM<sub>2.5</sub>=40 µg/m<sup>3</sup> (Residential / industrial / rural / other areas) and SO<sub>2</sub>=20 µg/m<sup>3</sup>, NO<sub>2</sub>=30 µg/m<sup>3</sup>, PM<sub>10</sub>=60 µg/m<sup>3</sup>, PM<sub>2.5</sub>=40 µg/m<sup>3</sup> (Ecologically sensitive area); Adequate data (taken for calculation), annual: locations where ≥50 days of monitoring was done in a year; Inadequate data (taken for calculation): locations < 50 days of monitoring were done in a year;

Number of monitoring stations / locations exceeding NAAQS on the basis of 24-hourly average data is presented in Table 2.4 and Figure 2.1. In residential/industrial/rural area, 3 (0.4 %) stations for SO<sub>2</sub>, 61 (8%) stations for NO<sub>2</sub>, 569 (78%) stations for PM<sub>10</sub> and 138 (70%) stations for PM<sub>2.5</sub> exceed NAAQS. In ecologically sensitive area 17 (100%) stations for PM<sub>10</sub> and 4 (100%) stations for PM<sub>2.5</sub> exceed NAAQS.

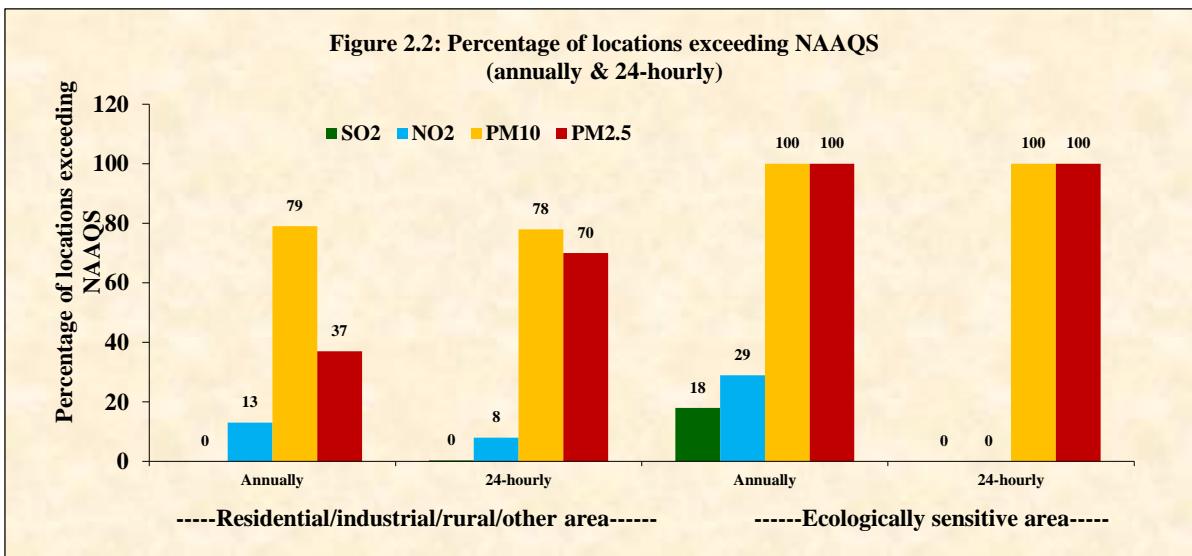
**Table 2.4. Number of sampling sites exceeding the 24-hourly NAAQS  
(Based on 24-hourly average concentration)**

| Data type   | Number of monitoring stations / locations      |                 |                  |                   |                             |                 |                  |                   |
|---|--|-----------------|------------------|-------------------|-----------------------------|-----------------|------------------|-------------------|
|   | Residential / industrial / rural / other areas |                 |                  |                   | Ecologically sensitive area |                 |                  |                   |
|   | SO <sub>2</sub>                                | NO <sub>2</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> | SO <sub>2</sub>             | NO <sub>2</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> |
| Not exceeding NAAQS (NE)                              | 714  | 657             | 162              | 59                | 17                          | 17              | 0                | 0                 |
| Exceeding NAAQS (E)                                   | 3  | 61              | 569              | 138               | 0                           | 0               | 17               | 4                 |
| Inadequate data (ID)                                  | 41   | 32              | 27               | 114               | 0                           | 0               | 0                | 2                 |
| No data (ND)  | 29   | 37              | 29               | 0                 | 0                           | 0               | 0                | 0                 |
| <b>Total monitoring stations (NE, E, ID &amp; ND)</b> | <b>787</b>                                     | <b>787</b>      | <b>787</b>       | <b>311</b>        | <b>17</b>                   | <b>17</b>       | <b>17</b>        | <b>6</b>          |

NAAQS (24-Hourly): SO<sub>2</sub>=80 µg/m<sup>3</sup>, NO<sub>2</sub>=80 µg/m<sup>3</sup>, PM<sub>10</sub>=100 µg/m<sup>3</sup>, PM<sub>2.5</sub>=60 µg/m<sup>3</sup> (Residential / industrial / rural / other areas) and (Ecologically sensitive area). Adequate data (taken for calculation), annual: cities where ≥50 days of monitoring was done in a year; Inadequate data (taken for calculation): cities < 50 days of monitoring were done in a year;



The percentage of locations exceeding national standards with respect to NO<sub>2</sub>, SO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> is depicted in Figure 2.2. On the basis of annual average data, percentage of monitoring stations / locations exceeding NAAQS with respect to NO<sub>2</sub> is 13%, PM<sub>10</sub> is 79% and PM<sub>2.5</sub> is 37% (Residential/Industrial/Rural area) and SO<sub>2</sub> is 18%, NO<sub>2</sub> is 29%, PM<sub>10</sub> and PM<sub>2.5</sub> is 100% (Ecologically sensitive area). On the basis of 24-hourly average data, percentage of monitoring stations / locations exceeding NAAQS with respect to SO<sub>2</sub> is 0.4%, NO<sub>2</sub> is 8%, PM<sub>10</sub> is 78% and PM<sub>2.5</sub> is 70% (Residential/Industrial/Rural area) and PM<sub>10</sub> and PM<sub>2.5</sub> is 100% (Ecologically sensitive area).



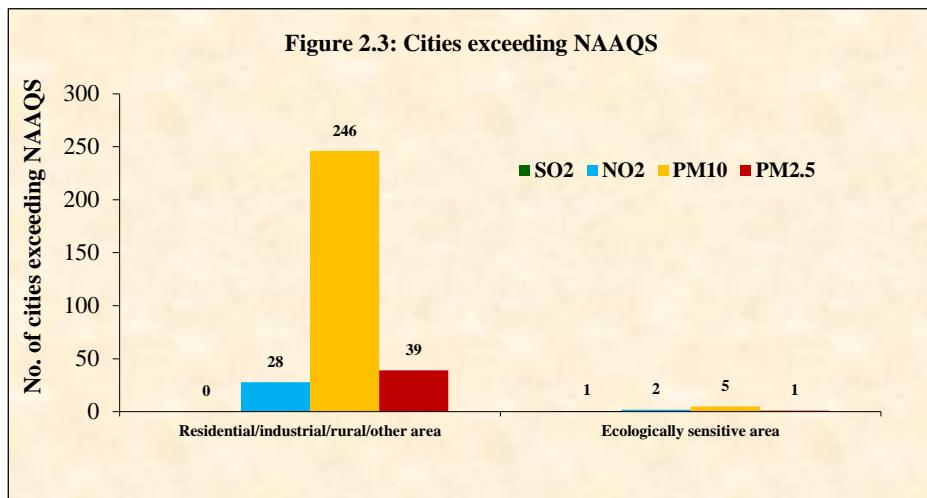
### 2.1.2 Cities exceeding NAAQS

Number of cities exceeding NAAQS on the basis of annual average data is presented in Table 2.5 and Figure 2.3. In residential/industrial/rural area, 28 cities for NO<sub>2</sub>, 246 cities (for PM<sub>10</sub>) and 39 cities for PM<sub>2.5</sub> exceed NAAQS. In ecologically sensitive area, 1 city for SO<sub>2</sub>, 2 cities for NO<sub>2</sub>, 5 cities (for PM<sub>10</sub>) and 1 city for PM<sub>2.5</sub> exceed NAAQS.

**Table 2.5. Number of cities exceeding the NAAQS  
(Based on annual average concentration)**

| Data type  | Number of cities                               |                 |                  |                   |                             |                 |                  |                   |
|--|--|-----------------|------------------|-------------------|-----------------------------|-----------------|------------------|-------------------|
|  | Residential / industrial / rural / other areas |                 |                  |                   | Ecologically sensitive area |                 |                  |                   |
|  | SO <sub>2</sub>                                | NO <sub>2</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> | SO <sub>2</sub>             | NO <sub>2</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> |
| Not exceeding NAAQS (NE)                           | 309  | 282             | 70               | 77                | 4                           | 3               | 0                | 0                 |
| Exceeding NAAQS (E)                                | 0  | 28              | 246              | 39                | 1                           | 2               | 5                | 1                 |
| Inadequate data (ID)                               | 15   | 14              | 11               | 30                | 0                           | 0               | 0                | 0                 |
| No data (ND)                                       | 15   | 15              | 12               | 0                 | 0                           | 0               | 0                | 0                 |
| <b>Total monitored cities (NE, E, ID &amp; ND)</b> | <b>339</b>                                     | <b>339</b>      | <b>339</b>       | <b>146</b>        | <b>5</b>                    | <b>5</b>        | <b>5</b>         | <b>1</b>          |

NAAQS (annual): SO<sub>2</sub>=50 µg/m<sup>3</sup>, NO<sub>2</sub>=40 µg/m<sup>3</sup>, PM<sub>10</sub>=60 µg/m<sup>3</sup>, PM<sub>2.5</sub>=40 µg/m<sup>3</sup> (Residential / industrial / rural / other areas) and SO<sub>2</sub>=20 µg/m<sup>3</sup>, NO<sub>2</sub>=30 µg/m<sup>3</sup>, PM<sub>10</sub>=60 µg/m<sup>3</sup>, PM<sub>2.5</sub>=40 µg/m<sup>3</sup> (Ecologically sensitive area) Adequate data (taken for calculation), annual: cities where ≥50 days of monitoring was done in a year; Inadequate data (taken for calculation): cities < 50 days of monitoring were done in a year;

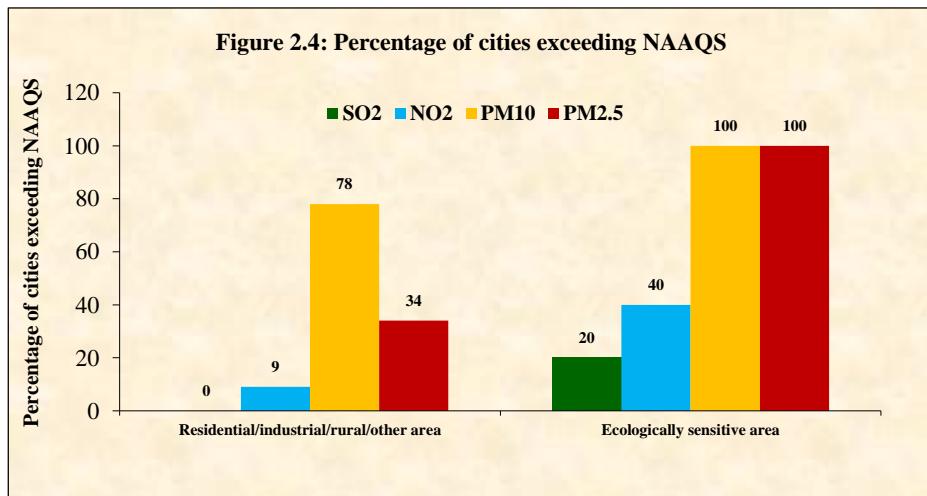


The percentage of cities exceeding national standards with respect to NO<sub>2</sub>, SO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> is depicted in Table 2.6 and Figure 2.4. On the basis of annual average data, percentage of cities exceeding NAAQS with respect to NO<sub>2</sub> is 9%, PM<sub>10</sub> is 77% and PM<sub>2.5</sub> is 33% (Residential/Industrial/Rural area) and SO<sub>2</sub> is 20%, NO<sub>2</sub> is 40%, PM<sub>10</sub> and PM<sub>2.5</sub> is 100% (Ecologically sensitive area).

**Table 2.6. Percentage of cities exceeding the NAAQS  
(Based on annual average concentration)**

| Data type                | Number of cities                               |                 |                  |                   |                             |                 |                  |                   |
|--------------------------|--|-----------------|------------------|-------------------|-----------------------------|-----------------|------------------|-------------------|
|                          | Residential / industrial / rural / other areas |                 |                  |                   | Ecologically sensitive area |                 |                  |                   |
|                          | SO <sub>2</sub>                                | NO <sub>2</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> | SO <sub>2</sub>             | NO <sub>2</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> |
| Not exceeding NAAQS (NE) | 100  | 91              | 22               | 66                | 80                          | 60              | 0                | 0                 |
| Exceeding NAAQS (E)      | 0  | 9               | 78               | 34                | 20                          | 40              | 100              | 100               |

NAAQS (annual): SO<sub>2</sub>=50 µg/m<sup>3</sup>, NO<sub>2</sub>=40 µg/m<sup>3</sup>, PM<sub>10</sub>=60 µg/m<sup>3</sup>, PM<sub>2.5</sub>=40 µg/m<sup>3</sup> (Residential / industrial / rural / other areas) and SO<sub>2</sub>=20 µg/m<sup>3</sup>, NO<sub>2</sub>=30 µg/m<sup>3</sup>, PM<sub>10</sub>=60 µg/m<sup>3</sup>, PM<sub>2.5</sub>=40 µg/m<sup>3</sup> (Ecologically sensitive area) Adequate data (taken for calculation), annual: cities where ≥50 days of monitoring was done in a year; Inadequate data (taken for calculation): cities < 50 days of monitoring were done in a year;



The annual minimum values, maximum values and average in each city and the exceedance of 24-hourly average for different pollutant is given below:

**Table 2.7: Ambient air quality in cities of the country during 2019**

| States / UTs      | City / town / village | Zones | District                            | Coastal city | Industrial cities | Million plus cities | Non-attainment cities | No. of AAQM stations | SO <sub>2</sub>                    |                                 |                                    | NO <sub>2</sub>                 |                                    |                                 | PM <sub>10</sub>                   |                                 |     |    |     |     |     |     |     |
|-------------------|-----------------------|-------|-------------------------------------|--------------|-------------------|---------------------|-----------------------|----------------------|------------------------------------|---------------------------------|------------------------------------|---------------------------------|------------------------------------|---------------------------------|------------------------------------|---------------------------------|-----|----|-----|-----|-----|-----|-----|
|                   |                       |       |                                     |              |                   |                     |                       |                      | Concentration in µg/m <sup>3</sup> | No. of observations in the year | Concentration in µg/m <sup>3</sup> | No. of observations in the year | Concentration in µg/m <sup>3</sup> | No. of observations in the year | Concentration in µg/m <sup>3</sup> | No. of observations in the year |     |    |     |     |     |     |     |
| Andhra Pradesh    | Anantapur             | S     | Anantapur                           |              |                   | NAC                 | 4                     | 4                    | 15                                 | 5                               | 427                                | 0                               | 9                                  | 26                              | 15                                 | 427                             | 0   | 16 | 138 | 67  | 429 | 51  |     |
|                   | Chittoor              | S     | Chittoor                            |              |                   | NAC                 | 5                     | 2                    | 19                                 | 5                               | 516                                | 0                               | 9                                  | 105                             | 19                                 | 517                             | 2   | 17 | 117 | 54  | 519 | 6   |     |
|                   | Eluru                 | S     | West Godavari                       |              |                   | NAC                 | 4                     | 4                    | 6                                  | 5                               | 432                                | 0                               | 15                                 | 30                              | 19                                 | 432                             | 0   | 41 | 102 | 63  | 432 | 1   |     |
|                   | Guntur                | S     | Guntur                              |              |                   | NAC                 | 4                     | 4                    | 6                                  | 5                               | 402                                | 0                               | 16                                 | 25                              | 19                                 | 402                             | 0   | 29 | 192 | 53  | 403 | 3   |     |
|                   | Kadapa                | S     | YS Rajshekhar Reddy/Kadapa/Cuddapah |              |                   | NAC                 | 5                     | 4                    | 19                                 | 5                               | 537                                | 0                               | 9                                  | 27                              | 15                                 | 537                             | 0   | 17 | 142 | 53  | 537 | 2   |     |
|                   | Kakinada              |       | East Godavari                       | Co           |                   |                     | 4                     | 4                    | 13                                 | 8                               | 418                                | 0                               | 9                                  | 29                              | 19                                 | 418                             | 0   | 14 | 221 | 61  | 422 | 66  |     |
|                   | Kurnool               | S     | Kurnool                             |              |                   | NAC                 | 4                     | 4                    | 14                                 | 5                               | 431                                | 0                               | 9                                  | 36                              | 15                                 | 431                             | 0   | 16 | 119 | 61  | 432 | 20  |     |
|                   | Nellore               | S     | Sri Potti Sriramulu Nellore         | Co           |                   | NAC                 | 4                     | 4                    | 6                                  | 5                               | 428                                | 0                               | 15                                 | 27                              | 19                                 | 428                             | 0   | 38 | 80  | 66  | 428 | 0   |     |
|                   | Ongole                | S     | Prakasam                            | Co           |                   | NAC                 | 4                     | 4                    | 6                                  | 5                               | 422                                | 0                               | 15                                 | 26                              | 19                                 | 422                             | 0   | 27 | 76  | 59  | 421 | 0   |     |
|                   | Rajahmundry           | S     | East Godavari                       | Co           |                   | NAC                 | 4                     | 4                    | 16                                 | 8                               | 404                                | 0                               | 10                                 | 29                              | 18                                 | 404                             | 0   | 15 | 221 | 62  | 408 | 75  |     |
|                   | Srikakulam            | S     | Srikakulam                          | Co           |                   | NAC                 | 4                     | 5                    | 15                                 | 8                               | 404                                | 0                               | 11                                 | 29                              | 19                                 | 404                             | 0   | 23 | 205 | 67  | 405 | 24  |     |
|                   | Tirupati              | S     | Chittoor                            | Co           |                   |                     | 4                     | 4                    | 8                                  | 5                               | 421                                | 0                               | 10                                 | 29                              | 15                                 | 421                             | 0   | 12 | 99  | 53  | 425 | 0   |     |
|                   | Vijaywada             | S     | Krishna                             | IA           | MP                | NAC                 | 9                     | 4                    | 11                                 | 5                               | 947                                | 0                               | 13                                 | 32                              | 19                                 | 948                             | 0   | 31 | 104 | 73  | 952 | 1   |     |
|                   | Vishakhapatnam        | S     | Visakhapatnam                       | Co           | CPA               | MP                  | NAC                   | 9                    | 5                                  | 15                              | 8                                  | 929                             | 0                                  | 10                              | 38                                 | 19                              | 929 | 0  | 25  | 270 | 76  | 932 | 181 |
|                   | Vizianagaram          | S     | Vizianagaram                        | Co           |                   | NAC                 | 4                     | 5                    | 14                                 | 8                               | 401                                | 0                               | 11                                 | 29                              | 19                                 | 401                             | 0   | 33 | 113 | 67  | 402 | 3   |     |
| Arunachal Pradesh | Itanagar              | NE    | Papum Pare                          |              |                   |                     | 1                     | 2                    | 10                                 | 3                               | 43                                 | 0                               | 5                                  | 17                              | 7                                  | 43                              | 0   | 10 | 228 | 97  | 48  | 18  |     |
|                   | Naharlagun            | NE    | Papum Pare                          |              |                   |                     | 1                     | 2                    | 6                                  | 3                               | 34                                 | 0                               | 5                                  | 14                              | 7                                  | 35                              | 0   | 9  | 187 | 74  | 41  | 11  |     |
| Assam             | Bongaigaon            | NE    | Bongaigaon                          |              |                   |                     | 2                     | 3                    | 12                                 | 4                               | 156                                | 0                               | 10                                 | 20                              | 12                                 | 156                             | 0   | 21 | 112 | 44  | 156 | 1   |     |
|                   | Daranga               | NE    | Chirang                             |              |                   |                     | 1                     | 4                    | 11                                 | 7                               | 94                                 | 0                               | 10                                 | 21                              | 14                                 | 94                              | 0   | 17 | 134 | 53  | 94  | 11  |     |
|                   | Dibrugarh             | NE    | Dibrugarh                           |              |                   |                     | 1                     | 4                    | 9                                  | 5                               | 89                                 | 0                               | 9                                  | 18                              | 11                                 | 89                              | 0   | 15 | 125 | 36  | 89  | 1   |     |
|                   | Golaghat              | NE    | Golaghat                            |              |                   |                     | 1                     | 4                    | 8                                  | 6                               | 80                                 | 0                               | 9                                  | 16                              | 12                                 | 80                              | 0   | 17 | 85  | 45  | 80  | 0   |     |
|                   | Guwahati              | NE    | Kamrup Metropolitan                 |              |                   | NAC                 | 6                     | 5                    | 24                                 | 8                               | 744                                | 0                               | 9                                  | 36                              | 15                                 | 744                             | 0   | 16 | 323 | 97  | 744 | 271 |     |

Chapter 2: Major findings – 2019

| States / UTs                         | City / town / village          | Zones | District              | Coastal city | Industrial cities | Million plus cities | Non-attainment cities | No. of AAQM stations | SO <sub>2</sub>                    |                             |                                 | NO <sub>2</sub>                    |                 |                                    | PM <sub>10</sub>            |                                    |           |                                    |                             |                                    |                |           |                 |
|--------------------------------------|--------------------------------|-------|-----------------------|--------------|-------------------|---------------------|-----------------------|----------------------|------------------------------------|-----------------------------|---------------------------------|------------------------------------|-----------------|------------------------------------|-----------------------------|------------------------------------|-----------|------------------------------------|-----------------------------|------------------------------------|----------------|-----------|-----------------|
|                                      |                                |       |                       |              |                   |                     |                       |                      | Concentration in µg/m <sup>3</sup> |                             | No. of observations in the year | Concentration in µg/m <sup>3</sup> |                 | Concentration in µg/m <sup>3</sup> |                             | Concentration in µg/m <sup>3</sup> |           | Concentration in µg/m <sup>3</sup> |                             | Concentration in µg/m <sup>3</sup> |                |           |                 |
|                                      |                                |       |                       |              |                   |                     |                       |                      | Minimum (24-hourly average)        | Maximum (24-hourly average) | Annual Average                  | Monitored                          | Exceeding NAAQS | Minimum (24-hourly average)        | Maximum (24-hourly average) | Annual Average                     | Monitored | Exceeding NAAQS                    | Minimum (24-hourly average) | Maximum (24-hourly average)        | Annual Average | Monitored | Exceeding NAAQS |
| Assam                                | Margherita                     | NE    | Tinsukia              |              |                   |                     |                       | 1                    | 4                                  | 9                           | 6                               | 91                                 | 0               | 9                                  | 18                          | 12                                 | 91        | 0                                  | 16                          | 93                                 | 48             | 91        | 0               |
|                                      | Nagaon                         | NE    | Nagaon                |              |                   |                     | NAC                   | 1                    | 5                                  | 10                          | 7                               | 97                                 | 0               | 11                                 | 20                          | 15                                 | 97        | 0                                  | 35                          | 269                                | 105            | 97        | 42              |
|                                      | Nalbari                        | NE    | Nalbari               |              |                   |                     | NAC                   | 1                    | 4                                  | 10                          | 7                               | 77                                 | 0               | 11                                 | 18                          | 14                                 | 77        | 0                                  | 37                          | 184                                | 87             | 77        | 25              |
|                                      | North Lakhimpur                | NE    | Lakhimpur             |              |                   |                     |                       | 1                    | 5                                  | 10                          | 7                               | 86                                 | 0               | 11                                 | 17                          | 14                                 | 86        | 0                                  | 18                          | 131                                | 56             | 86        | 12              |
|                                      | Silchar                        | NE    | Sibsagar              |              |                   |                     | NAC                   | 2                    | 5                                  | 9                           | 7                               | 149                                | 0               | 8                                  | 14                          | 11                                 | 149       | 0                                  | 32                          | 58                                 | 46             | 149       | 0               |
|                                      | Sivasagar                      | NE    | Cachar                |              |                   |                     | NAC                   | 2                    | 4                                  | 9                           | 6                               | 205                                | 0               | 9                                  | 18                          | 13                                 | 205       | 0                                  | 16                          | 116                                | 55             | 205       | 2               |
|                                      | Tezpur                         | NE    | Sonitpur              |              |                   |                     |                       | 1                    | 6                                  | 10                          | 7                               | 86                                 | 0               | 11                                 | 20                          | 15                                 | 86        | 0                                  | 24                          | 189                                | 98             | 86        | 41              |
|                                      | Tinsukia                       | NE    | Tinsukia              |              |                   |                     |                       | 3                    | 4                                  | 9                           | 6                               | 290                                | 0               | 6                                  | 18                          | 12                                 | 290       | 0                                  | 15                          | 100                                | 45             | 290       | 0               |
|                                      | Begusarai                      | E     | Begusarai             |              |                   |                     |                       | 1                    | 9                                  | 19                          | 12                              | 104                                | 0               | 16                                 | 39                          | 22                                 | 104       | 0                                  | 37                          | 164                                | 117            | 104       | 77              |
| Bihar                                | Darbhanga                      | E     | Darbhanga             |              |                   |                     |                       | 1                    | 12                                 | 22                          | 15                              | 105                                | 0               | 18                                 | 32                          | 24                                 | 105       | 0                                  | 35                          | 267                                | 123            | 105       | 67              |
|                                      | Gaya                           | E     | Gaya                  |              |                   |                     | NAC                   | 1                    | 6                                  | 15                          | 11                              | 104                                | 0               | 15                                 | 34                          | 21                                 | 104       | 0                                  | 13                          | 145                                | 71             | 104       | 21              |
|                                      | Muzaffarpur                    | E     | Muzaffarpur           |              |                   |                     | NAC                   | 1                    | 10                                 | 22                          | 14                              | 104                                | 0               | 19                                 | 49                          | 31                                 | 104       | 0                                  | 40                          | 414                                | 152            | 104       | 67              |
|                                      | Patna                          | E     | Patna                 |              | MP                | NAC                 | 2                     | 2                    | 14                                 | 3                           | 134                             | 0                                  | 13              | 121                                | 51                          | 134                                | 18        | 37                                 | 746                         | 237                                | 134            | 112       |                 |
|                                      | Rajgir                         | E     | Nalanda               |              |                   |                     |                       | 1                    | 5                                  | 15                          | 10                              | 104                                | 0               | 16                                 | 30                          | 21                                 | 104       | 0                                  | 12                          | 136                                | 69             | 104       | 19              |
|                                      | Sasaram                        | E     | Rohtas                |              |                   |                     |                       | 1                    | 6                                  | 13                          | 10                              | 105                                | 0               | 16                                 | 27                          | 20                                 | 105       | 0                                  | 12                          | 116                                | 61             | 105       | 7               |
|                                      | Chandigarh                     | N     | Chandigarh            |              | MP                | NAC                 | 5                     | 2                    | 2                                  | 2                           | 749                             | 0                                  | 5               | 85                                 | 19                          | 748                                | 1         | 15                                 | 444                         | 97                                 | 748            | 279       |                 |
| Chhattisgarh                         | Bilaspur                       | C     | Bilaspur              |              |                   |                     |                       | 1                    | 4                                  | 7                           | 6                               | 91                                 | 0               | 10                                 | 14                          | 12                                 | 91        | 0                                  | 28                          | 64                                 | 47             | 91        | 0               |
|                                      | Durg-Bhillainagar              | C     | Durg                  | IA           | MP                | NAC                 | 4                     | 3                    | 11                                 | 7                           | 325                             | 0                                  | 8               | 25                                 | 17                          | 325                                | 0         | 49                                 | 99                          | 79                                 | 324            | 0         |                 |
|                                      | Korba                          | C     | Korba                 | CPA          |                   | NAC                 | 3                     | 5                    | 13                                 | 8                           | 300                             | 0                                  | 16              | 30                                 | 18                          | 300                                | 0         | 33                                 | 95                          | 58                                 | 300            | 0         |                 |
|                                      | Raigarh                        | C     | Raigarh               |              |                   |                     |                       | 3                    |                                    |                             |                                 |                                    |                 |                                    |                             |                                    |           | 26                                 | 90                          | 64                                 | 228            | 0         |                 |
|                                      | Raipur                         | C     | Raipur                | IA           | MP                | NAC                 | 2                     | 11                   | 25                                 | 16                          | 107                             | 0                                  | 19              | 42                                 | 30                          | 107                                | 0         | 37                                 | 98                          | 69                                 | 185            | 0         |                 |
| Dadra & Nagar Haveli and Daman & Diu | Baldevi (Dadra & Nagar Haveli) | W     | Dadara & Nagar Haveli | Co           |                   |                     |                       | 1                    | 8                                  | 25                          | 16                              | 97                                 | 0               | 9                                  | 24                          | 17                                 | 97        | 0                                  | 22                          | 87                                 | 65             | 97        | 0               |
|                                      | Daman                          | W     | Dadara & Nagar Haveli | Co           |                   |                     |                       | 2                    | 8                                  | 39                          | 22                              | 196                                | 0               | 8                                  | 39                          | 24                                 | 196       | 0                                  | 23                          | 143                                | 95             | 196       | 92              |
|                                      | Patlara (Daman)                | W     | Daman                 | Co           |                   |                     |                       | 1                    | 8                                  | 25                          | 15                              | 100                                | 0               | 9                                  | 28                          | 17                                 | 100       | 0                                  | 27                          | 91                                 | 63             | 100       | 0               |
|                                      | Silvassa                       | W     | Daman                 | Co           |                   |                     |                       | 2                    | 10                                 | 41                          | 25                              | 199                                | 0               | 10                                 | 45                          | 27                                 | 199       | 0                                  | 50                          | 164                                | 105            | 199       | 102             |

Chapter 2: Major findings – 2019

| States / UTs     | City / town / village | Zones | District  | Coastal city | Industrial cities | Million plus cities | Non-attainment cities | No. of AAQM stations | SO <sub>2</sub>                           |                             |                                 | NO <sub>2</sub>                           |                 |   | PM <sub>10</sub>            |   |           |   |                             |                             |                |           |                 |
|------------------|-----------------------|-------|-----------|--------------|-------------------|---------------------|-----------------------|----------------------|---|-----------------------------|---------------------------------|---|-----------------|---|-----------------------------|---|-----------|---|-----------------------------|-----------------------------|----------------|-----------|-----------------|
|                  |                       |       |           |              |                   |                     |                       |                      | Concentration in $\mu\text{g}/\text{m}^3$ |                             | No. of observations in the year | Concentration in $\mu\text{g}/\text{m}^3$ |                 | Concentration in $\mu\text{g}/\text{m}^3$ |                             | Concentration in $\mu\text{g}/\text{m}^3$ |           | Concentration in $\mu\text{g}/\text{m}^3$ |                             |                             |                |           |                 |
|                  |                       |       |           |              |                   |                     |                       |                      | Minimum (24-hourly average)               | Maximum (24-hourly average) | Annual Average                  | Monitored                                 | Exceeding NAAQS | Minimum (24-hourly average)               | Maximum (24-hourly average) | Annual Average                            | Monitored | Exceeding NAAQS                           | Minimum (24-hourly average) | Maximum (24-hourly average) | Annual Average | Monitored | Exceeding NAAQS |
| Delhi            | Delhi                 | N     | Delhi     | CPA          | MP                | NAC                 | 10                    | 2                    | 23  | 5                           | 962                             | 0   | 11              | 209                                       | 70                          | 962                                       | 276       | 20  | 836                         | 199                         | 961            | 741       |                 |
| Goa              | Amona                 | W     | North Goa | Co           |                   |                     | 1                     | 9                    | 12  | 11                          | 105                             | 0   | 13              | 16  | 14                          | 105                                       | 0         | 32  | 166                         | 72                          | 105            | 26        |                 |
|                  | Assanora              | W     | North Goa | Co           |                   |                     | 1                     | 9                    | 12  | 11                          | 104                             | 0   | 13              | 16  | 14                          | 104                                       | 0         | 22  | 129                         | 57                          | 104            | 5         |                 |
|                  | Bicholim              | W     | North Goa | Co           |                   |                     | 1                     | 9                    | 12  | 11                          | 103                             | 0   | 13              | 17  | 14                          | 103                                       | 0         | 32  | 169                         | 63                          | 103            | 12        |                 |
|                  | Codli                 | W     | North Goa | Co           |                   |                     | 1                     | 9                    | 12  | 10                          | 103                             | 0   | 11              | 17  | 14                          | 103                                       | 0         | 30  | 160                         | 60                          | 103            | 7         |                 |
|                  | Cuncolim              | W     | South Goa | Co           |                   |                     | 1                     | 9                    | 13  | 11                          | 102                             | 0   | 13              | 17  | 14                          | 102                                       | 0         | 32  | 182                         | 80                          | 102            | 31        |                 |
|                  | Honda                 | W     | North Goa | Co           |                   |                     | 1                     | 9                    | 12  | 11                          | 104                             | 0   | 13              | 16  | 14                          | 104                                       | 0         | 30  | 112                         | 63                          | 104            | 3         |                 |
|                  | Kundaim               | W     | North Goa | Co           |                   |                     | 1                     | 9                    | 13  | 11                          | 104                             | 0   | 13              | 17  | 14                          | 104                                       | 0         | 21  | 138                         | 62                          | 104            | 12        |                 |
|                  | Mapusa                | W     | North Goa | Co           |                   |                     | 1                     | 2                    | 7   | 3                           | 90                              | 0   | 5               | 31  | 10                          | 90  | 0         | 14  | 268                         | 72                          | 90             | 13        |                 |
|                  | Margao                | W     | South Goa | Co           |                   |                     | 1                     | 9                    | 13  | 11                          | 102                             | 0   | 13              | 16  | 14                          | 102                                       | 0         | 31  | 198                         | 59                          | 102            | 9         |                 |
|                  | Mormugao              | W     | South Goa | Co           |                   |                     | 1                     | 2                    | 8   | 3                           | 68                              | 0   | 5               | 45  | 13                          | 68  | 0         | 16  | 437                         | 100                         | 68             | 24        |                 |
|                  | Panaji                | W     | North Goa | Co           |                   |                     | 1                     | 2                    | 17  | 3                           | 77                              | 0   | 5               | 31  | 13                          | 77  | 0         | 14  | 518                         | 87                          | 78             | 23        |                 |
|                  | Ponda                 | W     | North Goa | Co           |                   |                     | 1                     | 9                    | 12  | 11                          | 105                             | 0   | 13              | 16  | 14                          | 105                                       | 0         | 31  | 203                         | 66                          | 105            | 14        |                 |
|                  | Sanguem               | W     | South Goa | Co           |                   |                     | 1                     | 9                    | 12  | 11                          | 103                             | 0   | 13              | 17  | 14                          | 103                                       | 0         | 32  | 145                         | 57                          | 103            | 6         |                 |
|                  | Tilamol               | W     | South Goa | Co           |                   |                     | 1                     | 10                   | 13  | 11                          | 102                             | 0   | 13              | 16  | 14                          | 102                                       | 0         | 29  | 139                         | 67                          | 102            | 16        |                 |
|                  | Tuem                  | W     | North Goa | Co           |                   |                     | 1                     | 9                    | 13  | 11                          | 104                             | 0   | 13              | 17  | 14                          | 104                                       | 0         | 33  | 154                         | 57                          | 104            | 6         |                 |
|                  | Usgao                 | W     | North Goa | Co           |                   |                     | 1                     | 9                    | 12  | 11                          | 96                              | 0   | 13              | 17  | 14                          | 96  | 0         | 32  | 152                         | 64                          | 96             | 8         |                 |
|                  | Vasco                 | W     | South Goa | Co           |                   |                     | 1                     | 2                    | 11  | 3                           | 88                              | 0   | 5               | 29  | 13                          | 88  | 0         | 16  | 377                         | 81                          | 81             | 23        |                 |
| Gujarat          | Ahmedabad             | W     | Ahmedabad | CPA          | MP                | NAC                 | 9                     | 11                   | 39  | 20                          | 783                             | 0   | 16              | 57  | 25                          | 783                                       | 0         | 66  | 422                         | 135                         | 783            | 519       |                 |
|                  | Anklesvar             | W     | Bharuch   | Co           | CPA               |                     | 2                     | 12                   | 36  | 19                          | 176                             | 0   | 16              | 46  | 25                          | 176                                       | 0         | 55  | 239                         | 115                         | 176            | 90        |                 |
|                  | Jamnagar              | W     | Jamnagar  | Co           |                   |                     | 1                     | 11                   | 39  | 19                          | 87                              | 0   | 14              | 43  | 25                          | 87  | 0         | 57  | 267                         | 123                         | 87             | 48        |                 |
|                  | Rajkot                | W     | Rajkot    | Co           | MP                |                     | 2                     | 12                   | 40  | 20                          | 174                             | 0   | 16              | 51  | 25                          | 174                                       | 0         | 56  | 332                         | 127                         | 174            | 95        |                 |
|                  | Surat                 | W     | Surat     | Co           | IA                | MP                  | NAC                   | 3                    | 9   | 46                          | 23                              | 258                                       | 0               | 13  | 52                          | 27  | 258       | 0   | 57                          | 356                         | 128            | 255       | 146             |
|                  | Vadodara              | W     | Vadodara  |              | IA                | MP                  | NAC                   | 5                    | 11  | 46                          | 20                              | 434                                       | 0               | 14  | 60                          | 26  | 434       | 0   | 47                          | 378                         | 131            | 434       | 182             |
|                  | Vapi                  | W     | Valsad    | Co           | CPA               |                     | 2                     | 9                    | 38  | 20                          | 173                             | 0   | 10              | 58  | 25                          | 173                                       | 0         | 44  | 316                         | 119                         | 173            | 84        |                 |
| Himachal Pradesh | Baddi                 | N     | Solan     |              | IA                |                     | NAC                   | 3                    | 2   | 2                           | 2                               | 285                                       | 0               | 19  | 49                          | 31  | 281       | 0   | 49                          | 327                         | 148            | 277       | 239             |
|                  | Damtal                | N     | Kangra    |              |                   |                     | NAC                   | 2                    | 2   | 2                           | 2                               | 234                                       | 0               | 5   | 12                          | 9   | 232       | 0   | 17                          | 94                          | 49             | 249       | 0               |
|                  | Dharamshala           | N     | Kangra    |              |                   |                     |                       | 2                    | 2   | 2                           | 2                               | 207                                       | 0               | 5   | 14                          | 6   | 208       | 0   | 16                          | 114                         | 37             | 220       | 1               |
|                  | Gulaba                | N     | Kullu     |              |                   |                     |                       | 1                    | 2   | 3                           | 2                               | 19  | 0               | 5   | 7                           | 5   | 19        | 0   | 8                           | 62                          | 37             | 19        | 0               |
|                  | Kala Amb              | N     | Sirmaur   |              | IA                |                     | NAC                   | 2                    | 2   | 8                           | 3                               | 327                                       | 0               | 9   | 36                          | 14  | 327       | 0   | 18                          | 233                         | 101            | 339       | 182             |
|                  | Manali                | N     | Kullu     |              |                   |                     |                       | 2                    | 2   | 4                           | 2                               | 160                                       | 0               | 5   | 16                          | 8   | 160       | 0   | 19                          | 217                         | 64             | 184       | 24              |

Chapter 2: Major findings – 2019

| States / UTS    | City / town / village | Zones | District            | Coastal city | Industrial cities | Million plus cities | Non-attainment cities | No. of AAQM stations | SO <sub>2</sub>                           |                             |                                 | NO <sub>2</sub>                           |                 |                                 | PM <sub>10</sub>                          |                |                                 |                 |                             |                             |                |           |                 |
|-----------------|-----------------------|-------|---------------------|--------------|-------------------|---------------------|-----------------------|----------------------|---|-----------------------------|---------------------------------|---|-----------------|---------------------------------|---|----------------|---------------------------------|-----------------|-----------------------------|-----------------------------|----------------|-----------|-----------------|
|                 |                       |       |                     |              |                   |                     |                       |                      | Concentration in $\mu\text{g}/\text{m}^3$ |                             | No. of observations in the year | Concentration in $\mu\text{g}/\text{m}^3$ |                 | No. of observations in the year | Concentration in $\mu\text{g}/\text{m}^3$ |                | No. of observations in the year |                 |                             |                             |                |           |                 |
|                 |                       |       |                     |              |                   |                     |                       |                      | Minimum (24-hourly average)               | Maximum (24-hourly average) | Annual Average                  | Monitored                                 | Exceeding NAAQS | Minimum (24-hourly average)     | Maximum (24-hourly average)               | Annual Average | Monitored                       | Exceeding NAAQS | Minimum (24-hourly average) | Maximum (24-hourly average) | Annual Average | Monitored | Exceeding NAAQS |
| Jammu & Kashmir | Marhi                 | N     | Chamba              |              |                   |                     |                       | 1                    | 2   | 2                           | 2                               | 12  | 0               | 5                               | 11  | 5              | 12                              | 0               | 18                          | 60                          | 35             | 12        | 0               |
|                 | Nalagarh              | N     | Solan               |              |                   |                     | NAC                   | 1                    | 2   | 2                           | 2                               | 113                                       | 0               | 18                              | 56  | 25             | 114                             | 0               | 68                          | 251                         | 125            | 120       | 86              |
|                 | Paonta Sahib          | N     | Sirmaur             |              |                   |                     | NAC                   | 2                    | 2   | 8                           | 3                               | 285                                       | 0               | 9                               | 21  | 14             | 285                             | 0               | 17                          | 188                         | 83             | 284       | 69              |
|                 | Parwanoo              | N     | Solan               | IA           |                   | NAC                 | 2                     | 2                    | 4   | 2                           | 254                             | 0   | 5               | 34                              | 6   | 255            | 0                               | 29              | 192                         | 64                          | 269            | 2         |                 |
|                 | Shimla                | N     | Shimla              |              |                   |                     |                       | 2                    | 2   | 7                           | 2                               | 203                                       | 0               | 11                              | 34  | 26             | 202                             | 0               | 19                          | 137                         | 59             | 213       | 5               |
|                 | Sunder Nagar          | N     | Mandi               |              |                   | NAC                 | 2                     | 2                    | 2   | 2                           | 250                             | 0   | 5               | 26                              | 9   | 250            | 0                               | 5               | 193                         | 72                          | 251            | 30        |                 |
|                 | Una                   | N     | Una                 |              |                   |                     |                       | 2                    | 2   | 3                           | 2                               | 17  | 0               | 7                               | 8   | 7              | 17                              | 0               | 30                          | 79                          | 61             | 261       | 0               |
|                 | Vashisht              | N     | Kullu               |              |                   |                     |                       | 1                    | 2   | 4                           | 2                               | 44  | 0               | 5                               | 11  | 5              | 44                              | 0               | 26                          | 96                          | 48             | 44        | 0               |
| Jharkhand       | Jammu                 | N     | Jammu               |              |                   | NAC                 | 3                     | 2                    | 5   | 3                           | 201                             | 0   | 6               | 26                              | 17  | 201            | 0                               | 70              | 186                         | 139                         | 272            | 262       |                 |
|                 | Pulwama               | N     | Pulwama             |              |                   |                     |                       | 1                    |   |                             |                                 |   |                 |                                 |   |                |                                 | 43              | 269                         | 120                         | 58             | 32        |                 |
|                 | Srinagar              | N     | Srinagar            | MP           | NAC               | 3                   |                       |                      |   |                             |                                 |   |                 |                                 |   |                |                                 | 42              | 858                         | 132                         | 160            | 95        |                 |
| Karnataka       | Barajamda             | E     | West Singhbhum      | IA           |                   |                     | 1                     | 13                   | 35  | 17                          | 91                              | 0   | 18              | 28                              | 23  | 91             | 0                               | 50              | 98                          | 76                          | 91             | 0         |                 |
|                 | Dhanbad               | E     | Dhanbad             | CPA          | MP                | NAC                 | 3                     | 10                   | 18  | 14                          | 277                             | 0   | 28              | 44                              | 35  | 277            | 0                               | 73              | 437                         | 237                         | 278            | 255       |                 |
|                 | Jamshedpur            | E     | East Singhbhum      | IA           | MP                |                     | 2                     | 30                   | 44  | 38                          | 184                             | 0   | 37              | 54                              | 47  | 184            | 0                               | 61              | 197                         | 138                         | 184            | 164       |                 |
|                 | Jharia                | E     | Dhanbad             |              |                   |                     | 1                     | 12                   | 17  | 14                          | 105                             | 0   | 29              | 41                              | 35  | 105            | 0                               | 109             | 427                         | 302                         | 105            | 105       |                 |
|                 | Ranchi                | E     | Ranchi              |              | MP                |                     | 1                     | 11                   | 27  | 18                          | 96                              | 0   | 35              | 121                             | 37  | 96             | 1                               | 73              | 168                         | 109                         | 96             | 94        |                 |
|                 | Saraikela             | E     | Saraikela Kharsawan | IA           |                   |                     | 1                     | 30                   | 43  | 37                          | 91                              | 0   | 39              | 53                              | 46  | 91             | 0                               | 66              | 236                         | 135                         | 91             | 80        |                 |
|                 | Sindri                | E     | Dhanbad             |              |                   |                     | 1                     | 10                   | 16  | 13                          | 73                              | 0   | 24              | 40                              | 33  | 73             | 0                               | 24              | 204                         | 137                         | 75             | 52        |                 |
| Karnataka       | Bagalkote             | S     | Bagalkot            |              |                   |                     | 1                     | 2                    | 2   | 2                           | 85                              | 0   | 8               | 32                              | 17  | 85             | 0                               | 16              | 117                         | 45                          | 85             | 2         |                 |
|                 | Bangalore             | S     | Bengaluru Urban     |              | MP                | NAC                 | 9                     | 2                    | 12  | 3                           | 736                             | 0   | 9               | 41                              | 25  | 736            | 0                               | 11              | 186                         | 74                          | 702            | 157       |                 |
|                 | Belgaum               | S     | Belagavi            |              |                   |                     | 1                     | 2                    | 9   | 2                           | 52                              | 0   | 9               | 27                              | 16  | 52             | 0                               | 18              | 169                         | 87                          | 52             | 20        |                 |
|                 | Bidar                 | S     | Bidar               | IA           |                   |                     | 1                     | 2                    | 4   | 2                           | 52                              | 0   | 5               | 16                              | 9   | 59             | 0                               | 14              | 155                         | 71                          | 60             | 13        |                 |
|                 | Bijapur               | S     | Vijayapura          |              |                   |                     | 1                     | 2                    | 2   | 2                           | 38                              | 0   | 9               | 33                              | 17  | 36             | 0                               | 32              | 208                         | 93                          | 38             | 13        |                 |
|                 | Chitradurga           | S     | Chitradurga         |              |                   |                     | 1                     | 2                    | 20  | 6                           | 105                             | 0   | 5               | 11                              | 6   | 105            | 0                               | 18              | 98                          | 52                          | 105            | 0         |                 |
|                 | Devanagere            | S     | Davanagere          |              | NAC               | 3                   | 2                     | 30                   | 10  | 276                         | 0                               | 5   | 41              | 11                              | 276                                       | 0              | 17                              | 212             | 70                          | 276                         | 55             |           |                 |
|                 | Gulburga              | S     | Kalaburagi          |              | NAC               | 1                   | 2                     | 4                    | 3   | 50                          | 0                               | 8   | 28              | 13                              | 58  | 0              | 32                              | 240             | 87                          | 58                          | 19             |           |                 |
|                 | Hassan                | S     | Hassan              |              |                   |                     | 1                     | 2                    | 5   | 3                           | 104                             | 0   | 14              | 27                              | 20  | 104            | 0                               | 27              | 49                          | 37                          | 104            | 0         |                 |
|                 | Hubli-Dharwad         | S     | Dharwad             |              | NAC               | 2                   | 4                     | 6                    | 5   | 209                         | 0                               | 13  | 26              | 19                              | 209                                       | 0              | 47                              | 91              | 69                          | 209                         | 0              |           |                 |
|                 | Kolar                 | S     | Kolar               |              |                   |                     | 1                     | 2                    | 2   | 2                           | 98                              | 0   | 17              | 40                              | 27  | 98             | 0                               | 60              | 152                         | 109                         | 98             | 58        |                 |
|                 | Mandy                 | S     | Mandy               |              |                   |                     | 1                     | 2                    | 9   | 2                           | 107                             | 0   | 11              | 27                              | 14  | 107            | 0                               | 34              | 81                          | 43                          | 106            | 0         |                 |

| States / UTs   | City / town / village | Zones | District           | Coastal city | Industrial cities | Million plus cities | Non-attainment cities | No. of AAQM stations | SO <sub>2</sub>                    |                             |                                 | NO <sub>2</sub>                    |                 |                                    | PM <sub>10</sub>            |                                    |           |                 |                             |                             |                |           |                 |
|----------------|-----------------------|-------|--------------------|--------------|-------------------|---------------------|-----------------------|----------------------|------------------------------------|-----------------------------|---------------------------------|------------------------------------|-----------------|------------------------------------|-----------------------------|------------------------------------|-----------|-----------------|-----------------------------|-----------------------------|----------------|-----------|-----------------|
|                |                       |       |                    |              |                   |                     |                       |                      | Concentration in µg/m <sup>3</sup> |                             | No. of observations in the year | Concentration in µg/m <sup>3</sup> |                 | Concentration in µg/m <sup>3</sup> |                             | Concentration in µg/m <sup>3</sup> |           |                 |                             |                             |                |           |                 |
|                |                       |       |                    |              |                   |                     |                       |                      | Minimum (24-hourly average)        | Maximum (24-hourly average) | Annual Average                  | Monitored                          | Exceeding NAAQS | Minimum (24-hourly average)        | Maximum (24-hourly average) | Annual Average                     | Monitored | Exceeding NAAQS | Minimum (24-hourly average) | Maximum (24-hourly average) | Annual Average | Monitored | Exceeding NAAQS |
|                | Mangalore             | S     | Dakshina Kannada   | Co           | CPA               |                     |                       | 1                    | 5                                  | 9                           | 7                               | 92                                 | 0               | 9                                  | 11                          | 10                                 | 92        | 0               | 23                          | 80                          | 47             | 92        | 0               |
|                | Mysore                | S     | Mysuru             |              |                   |                     |                       | 2                    | 2                                  | 12                          | 6                               | 112                                | 0               | 11                                 | 34                          | 13                                 | 112       | 0               | 30                          | 70                          | 52             | 110       | 0               |
|                | Raichur               | S     | Raichur            |              | IA                |                     |                       | 1                    | 2                                  | 7                           | 2                               | 77                                 | 0               | 5                                  | 27                          | 11                                 | 77        | 0               | 17                          | 186                         | 74             | 77        | 16              |
|                | Shimoga               | S     | Shivamogga         |              |                   |                     |                       | 1                    | 3                                  | 50                          | 24                              | 100                                | 0               | 5                                  | 14                          | 6                                  | 100       | 0               | 11                          | 79                          | 33             | 100       | 0               |
|                | Timukuru              | S     | Tumakuru           |              |                   |                     |                       | 1                    | 2                                  | 2                           | 2                               | 103                                | 0               | 17                                 | 42                          | 27                                 | 103       | 0               | 41                          | 145                         | 75             | 103       | 7               |
| Kerala         | Alappuzha             | S     | Alappuzha          | Co           |                   |                     |                       | 3                    | 2                                  | 5                           | 2                               | 203                                | 0               | 5                                  | 10                          | 5                                  | 203       | 0               | 23                          | 84                          | 56             | 203       | 0               |
|                | Kochi                 | S     | Ernakulam          | Co           | CPA               | MP                  |                       | 8                    | 2                                  | 12                          | 3                               | 734                                | 0               | 5                                  | 43                          | 14                                 | 734       | 0               | 11                          | 181                         | 46             | 729       | 10              |
|                | Kollam                | S     | Kollam             | Co           |                   | MP                  |                       | 2                    | 2                                  | 5                           | 3                               | 220                                | 0               | 5                                  | 9                           | 6                                  | 220       | 0               | 32                          | 55                          | 45             | 220       | 0               |
|                | Kottayam              | S     | Kottayam           | Co           |                   |                     |                       | 2                    | 2                                  | 4                           | 3                               | 238                                | 0               | 12                                 | 14                          | 13                                 | 238       | 0               | 21                          | 52                          | 35             | 238       | 0               |
|                | Kozhikode             | S     | Kozhikode          | Co           |                   | MP                  |                       | 2                    | 2                                  | 2                           | 2                               | 172                                | 0               | 5                                  | 13                          | 5                                  | 170       | 0               | 12                          | 119                         | 44             | 170       | 10              |
|                | Malapuram             | S     | Malappuram         | Co           |                   | MP                  |                       | 2                    | 2                                  | 2                           | 2                               | 107                                | 0               | 9                                  | 21                          | 15                                 | 107       | 0               | 21                          | 70                          | 35             | 107       | 0               |
|                | Palakkad              | S     | Palakkad           |              |                   |                     |                       | 1                    | 2                                  | 10                          | 2                               | 98                                 | 0               | 5                                  | 28                          | 7                                  | 98        | 0               | 11                          | 144                         | 51             | 98        | 4               |
|                | Pathanamthitta        | S     | Pathanamthitta     | Co           |                   |                     |                       | 1                    | 2                                  | 2                           | 2                               | 100                                | 0               | 14                                 | 19                          | 17                                 | 100       | 0               | 31                          | 37                          | 34             | 100       | 0               |
|                | Thiruvananthapuram    | S     | Thiruvananthapuram | Co           |                   | MP                  |                       | 4                    | 3                                  | 28                          | 9                               | 420                                | 0               | 7                                  | 40                          | 16                                 | 420       | 0               | 22                          | 82                          | 42             | 420       | 0               |
|                | Thissur               | S     | Thrissur           | Co           |                   | MP                  |                       | 2                    | 2                                  | 12                          | 3                               | 178                                | 0               | 5                                  | 20                          | 5                                  | 178       | 0               | 22                          | 70                          | 38             | 178       | 0               |
| Madhya Pradesh | Wayanad               | S     | Wayanad            | Co           |                   |                     |                       | 2                    | 2                                  | 2                           | 2                               | 183                                | 0               | 5                                  | 5                           | 5                                  | 183       | 0               | 14                          | 41                          | 27             | 183       | 0               |
|                | Amlai                 | C     | Anuppur            |              |                   |                     |                       | 2                    | 9                                  | 19                          | 13                              | 129                                | 0               | 14                                 | 26                          | 20                                 | 129       | 0               | 54                          | 118                         | 85             | 129       | 27              |
|                | Bhopal                | C     | Bhopal             |              |                   | MP                  | NAC                   | 8                    | 2                                  | 28                          | 8                               | 564                                | 0               | 5                                  | 56                          | 17                                 | 569       | 0               | 53                          | 420                         | 161            | 569       | 525             |
|                | Chhindwara            | C     | Chhindwara         |              |                   |                     |                       | 2                    | 2                                  | 6                           | 3                               | 183                                | 0               | 7                                  | 21                          | 14                                 | 184       | 0               | 29                          | 138                         | 78             | 184       | 10              |
|                | Dewas                 | C     | Dewas              |              | IA                |                     | NAC                   | 3                    | 9                                  | 33                          | 19                              | 283                                | 0               | 13                                 | 35                          | 26                                 | 283       | 0               | 45                          | 98                          | 79             | 283       | 0               |
|                | Gwalior               | C     | Gwalior            |              | IA                | MP                  | NAC                   | 2                    | 2                                  | 32                          | 13                              | 183                                | 0               | 8                                  | 46                          | 24                                 | 183       | 0               | 41                          | 382                         | 139            | 183       | 152             |
|                | Indore                | C     | Indore             |              | CPA               | MP                  | NAC                   | 3                    | 3                                  | 20                          | 9                               | 321                                | 0               | 7                                  | 67                          | 18                                 | 321       | 0               | 22                          | 132                         | 77             | 294       | 28              |
|                | Jabalpur              | C     | Jabalpur           |              |                   | MP                  |                       | 2                    | 2                                  | 16                          | 7                               | 202                                | 0               | 11                                 | 22                          | 16                                 | 202       | 0               | 49                          | 128                         | 84             | 202       | 6               |
|                | Katni                 | C     | Katni              |              |                   |                     |                       | 2                    | 7                                  | 18                          | 10                              | 168                                | 0               | 17                                 | 36                          | 28                                 | 168       | 0               | 80                          | 172                         | 98             | 168       | 59              |
|                | Nagda                 | C     | Ujjain             |              | IA                |                     |                       | 3                    | 4                                  | 26                          | 11                              | 234                                | 0               | 7                                  | 25                          | 13                                 | 234       | 0               | 30                          | 93                          | 53             | 230       | 0               |
|                | Prithampur            | C     | Dhar               |              | IA                |                     |                       | 2                    | 6                                  | 14                          | 10                              | 206                                | 0               | 11                                 | 24                          | 18                                 | 206       | 0               | 46                          | 115                         | 86             | 206       | 15              |
|                | Sagar                 | C     | Sagar              |              |                   |                     | NAC                   | 2                    | 2                                  | 6                           | 3                               | 135                                | 0               | 5                                  | 32                          | 13                                 | 197       | 0               | 19                          | 123                         | 72             | 198       | 4               |
|                | Satna                 | C     | Satna              |              |                   |                     |                       | 2                    | 2                                  | 6                           | 4                               | 152                                | 0               | 5                                  | 34                          | 10                                 | 148       | 0               | 8                           | 185                         | 123            | 150       | 137             |
|                | Singrauli             | C     | Singrauli          |              | CPA               |                     |                       | 3                    | 13                                 | 64                          | 31                              | 251                                | 0               | 19                                 | 112                         | 48                                 | 251       | 21              | 30                          | 492                         | 192            | 250       | 204             |
|                | Ujjain                | C     | Ujjain             |              |                   |                     | NAC                   | 4                    | 7                                  | 15                          | 11                              | 242                                | 0               | 8                                  | 21                          | 12                                 | 241       | 0               | 37                          | 115                         | 78             | 240       | 69              |

Chapter 2: Major findings – 2019

| States / UTs | City / town / village | Zones | District           | Coastal city | Industrial cities | Million plus cities | Non-attainment cities | No. of AAQM stations | SO <sub>2</sub>                           |                             |                                 | NO <sub>2</sub>                           |                 |   | PM <sub>10</sub>            |   |           |                 |                             |                             |                |           |                 |
|--------------|-----------------------|-------|--------------------|--------------|-------------------|---------------------|-----------------------|----------------------|---|-----------------------------|---------------------------------|---|-----------------|---|-----------------------------|---|-----------|-----------------|-----------------------------|-----------------------------|----------------|-----------|-----------------|
|              |                       |       |                    |              |                   |                     |                       |                      | Concentration in $\mu\text{g}/\text{m}^3$ |                             | No. of observations in the year | Concentration in $\mu\text{g}/\text{m}^3$ |                 | Concentration in $\mu\text{g}/\text{m}^3$ |                             | Concentration in $\mu\text{g}/\text{m}^3$ |           |                 |                             |                             |                |           |                 |
|              |                       |       |                    |              |                   |                     |                       |                      | Minimum (24-hourly average)               | Maximum (24-hourly average) | Annual Average                  | Monitored                                 | Exceeding NAAQS | Minimum (24-hourly average)               | Maximum (24-hourly average) | Annual Average                            | Monitored | Exceeding NAAQS | Minimum (24-hourly average) | Maximum (24-hourly average) | Annual Average | Monitored | Exceeding NAAQS |
| Maharashtra  | Akola                 | W     | Akola              |              |                   | NAC                 | 3                     | 11                   | 18  | 14                          | 427                             | 0   | 12              | 19  | 14                          | 427                                       | 0         | 60              | 81                          | 68                          | 427            | 0         |                 |
|              | Ambernath             | W     | Thane              | Co           |                   |                     | 1                     | 12                   | 47  | 27                          | 131                             | 0   | 21              | 129                                       | 66                          | 131                                       | 33        | 26              | 330                         | 118                         | 131            | 69        |                 |
|              | Amravati              | W     | Amravati           |              |                   | NAC                 | 3                     | 8                    | 24  | 14                          | 461                             | 0   | 9               | 25  | 15                          | 461                                       | 0         | 54              | 136                         | 89                          | 461            | 145       |                 |
|              | Aurangabad            | W     | Aurangabad         |              | CPA               | MP                  | NAC                   | 4                    | 6   | 24                          | 13                              | 362                                       | 0               | 10  | 68                          | 36  | 362       | 0               | 43                          | 104                         | 74             | 350       | 1               |
|              | Badlapur              | W     | Thane              | Co           |                   | NAC                 | 1                     | 11                   | 58  | 27                          | 187                             | 0   | 19              | 120                                       | 60                          | 187                                       | 32        | 17              | 319                         | 108                         | 187            | 81        |                 |
|              | Bhiwandi              | W     | Thane              | Co           |                   |                     | 3                     | 22                   | 44  | 32                          | 503                             | 0   | 31              | 69  | 44                          | 503                                       | 0         | 21              | 85                          | 69                          | 503            | 0         |                 |
|              | Chandrapur            | W     | Chandrapur         |              | CPA               |                     | NAC                   | 6                    | 3   | 7                           | 4                               | 651                                       | 0               | 10  | 85                          | 29  | 651       | 1               | 23                          | 357                         | 133            | 651       | 398             |
|              | Dombivali             | W     | Thane              | Co           | CPA               |                     |                       | 1                    | 11  | 54                          | 27                              | 190                                       | 0               | 20  | 120                         | 60  | 190       | 29              | 17                          | 295                         | 106            | 190       | 89              |
|              | Jalgaon               | W     | Jalgaon            |              |                   | NAC                 | 3                     | 9                    | 16  | 12                          | 461                             | 0   | 27              | 38  | 33                          | 461                                       | 0         | 46              | 93                          | 60                          | 420            | 0         |                 |
|              | Jalna                 | W     | Jalna              |              |                   | NAC                 | 2                     | 8                    | 12  | 10                          | 276                             | 0   | 33              | 52  | 40                          | 276                                       | 0         | 75              | 120                         | 97                          | 276            | 64        |                 |
|              | Kolhapur              | W     | Kolhapur           |              |                   | NAC                 | 3                     | 7                    | 41  | 19                          | 430                             | 0   | 10              | 82  | 32                          | 430                                       | 2         | 36              | 158                         | 85                          | 431            | 167       |                 |
|              | Latur                 | W     | Latur              |              |                   | NAC                 | 3                     | 4                    | 7   | 5                           | 515                             | 0   | 18              | 27  | 21                          | 515                                       | 0         | 54              | 152                         | 86                          | 515            | 86        |                 |
|              | Mumbai                | W     | Mumbai City        | Co           |                   | MP                  | NAC                   | 3                    | 2   | 5                           | 2                               | 259                                       | 0               | 5   | 73                          | 27  | 259       | 0               | 21                          | 591                         | 125            | 259       | 153             |
|              | Nagpur                | W     | Nagpur             |              |                   | MP                  | NAC                   | 7                    | 2   | 24                          | 10                              | 852                                       | 0               | 5   | 83                          | 32  | 852       | 1               | 3                           | 898                         | 101            | 852       | 281             |
|              | Nashik                | W     | Nashik             |              | IA                | MP                  | NAC                   | 4                    | 2   | 30                          | 10                              | 781                                       | 0               | 6   | 72                          | 22  | 781       | 0               | 23                          | 312                         | 63             | 781       | 96              |
|              | Navi Mumbai           | W     | Raigad             | Co           | CPA               |                     | NAC                   | 6                    | 12  | 25                          | 17                              | 100                                       | 0               | 17  | 75                          | 47  | 1000      | 0               | 31                          | 83                          | 54             | 100       | 0               |
|              | Pimpri-Chinchwad      | W     | Pune               |              | IA                |                     |                       | 1                    | 6   | 75                          | 28                              | 199                                       | 0               | 23  | 176                         | 78  | 199       | 77              | 13                          | 219                         | 76             | 199       | 49              |
|              | Pune                  | W     | Pune               |              |                   | MP                  | NAC                   | 3                    | 6   | 90                          | 37                              | 208                                       | 3               | 21  | 254                         | 87  | 208       | 107             | 14                          | 331                         | 143            | 208       | 141             |
|              | Sangli                | W     | Sangli             |              |                   | NAC                 | 3                     | 6                    | 21  | 9                           | 488                             | 0   | 10              | 102                                       | 39                          | 488                                       | 34        | 14              | 203                         | 67                          | 488            | 121       |                 |
|              | Solapur               | W     | Solapur            |              |                   | NAC                 | 2                     | 11                   | 21  | 16                          | 246                             | 0   | 31              | 39  | 35                          | 246                                       | 0         | 54              | 89                          | 74                          | 246            | 0         |                 |
|              | Thane                 | W     | Thane              | Co           |                   | MP                  | NAC                   | 3                    | 13  | 31                          | 20                              | 146                                       | 0               | 32  | 45                          | 37  | 146       | 0               | 47                          | 232                         | 128            | 145       | 81              |
|              | Ulhasnagar            | W     | Thane              | Co           |                   | NAC                 | 2                     | 11                   | 48  | 24                          | 206                             | 0   | 18              | 110                                       | 56                          | 206                                       | 16        | 17              | 319                         | 94                          | 206            | 65        |                 |
| Meghalaya    | Imphal                | NE    | Imphal West        |              |                   |                     |                       | 1                    | 3   | 18                          | 9                               | 32  | 0               | 5   | 52                          | 21  | 57        | 0               | 38                          | 180                         | 109            | 58        | 36              |
|              |                       |       | Ri-Bhoi            |              | IA                |                     | NAC                   | 1                    | 2   | 28                          | 15                              | 121                                       | 0               | 5   | 18                          | 13  | 121       | 0               | 17                          | 199                         | 103            | 121       | 80              |
|              | Byrnihat              | NE    | West Jaintia Hills |              |                   |                     |                       | 1                    | 2   | 24                          | 7                               | 121                                       | 0               | 5   | 18                          | 13  | 121       | 0               | 16                          | 167                         | 53             | 121       | 27              |
|              | Dawki                 | NE    | East Jaintia Hills |              |                   |                     |                       | 1                    | 2   | 4                           | 3                               | 122                                       | 0               | 5   | 15                          | 11  | 122       | 0               | 17                          | 55                          | 43             | 122       | 0               |
|              | Khliehriat            | NE    | West Khasi Hills   |              |                   |                     |                       | 1                    | 2   | 8                           | 2                               | 121                                       | 0               | 5   | 21                          | 13  | 121       | 0               | 8                           | 36                          | 30             | 121       | 0               |
|              | Nongstoin             | NE    | East Khasi Hills   |              |                   |                     |                       | 4                    | 2   | 9                           | 3                               | 463                                       | 0               | 5   | 26                          | 12  | 463       | 0               | 12                          | 69                          | 36             | 462       | 0               |
|              | Shillong              | NE    |                    |              |                   |                     |                       |                      |   |                             |                                 |   |                 |   |                             |   |           |                 |                             |                             |                |           |                 |

Chapter 2: Major findings – 2019

| States / UTS | City / town / village | Zones | District                | Coastal city | Industrial cities | Million plus cities | Non-attainment cities | No. of AAQM stations | SO <sub>2</sub>                           |                             |                                 | NO <sub>2</sub>                           |                 |   | PM <sub>10</sub>            |   |           |   |                             |                             |                |           |                 |
|--------------|-----------------------|-------|-------------------------|--------------|-------------------|---------------------|-----------------------|----------------------|---|-----------------------------|---------------------------------|---|-----------------|---|-----------------------------|---|-----------|---|-----------------------------|-----------------------------|----------------|-----------|-----------------|
|              |                       |       |                         |              |                   |                     |                       |                      | Concentration in $\mu\text{g}/\text{m}^3$ |                             | No. of observations in the year | Concentration in $\mu\text{g}/\text{m}^3$ |                 | Concentration in $\mu\text{g}/\text{m}^3$ |                             | Concentration in $\mu\text{g}/\text{m}^3$ |           | Concentration in $\mu\text{g}/\text{m}^3$ |                             |                             |                |           |                 |
|              |                       |       |                         |              |                   |                     |                       |                      | Minimum (24-hourly average)               | Maximum (24-hourly average) | Annual Average                  | Monitored                                 | Exceeding NAAQS | Minimum (24-hourly average)               | Maximum (24-hourly average) | Annual Average                            | Monitored | Exceeding NAAQS                           | Minimum (24-hourly average) | Maximum (24-hourly average) | Annual Average | Monitored | Exceeding NAAQS |
|              | Tura                  | NE    | West Garo Hills         |              |                   |                     |                       | 1                    | 2   | 4                           | 3                               | 116                                       | 0               | 5   | 16                          | 12  | 116       | 0   | 14                          | 40                          | 31             | 116       | 0               |
|              | Umiam / Umsning       | NE    | East Khasi Hills        |              |                   |                     |                       | 1                    | 2   | 6                           | 3                               | 120                                       | 0               | 5   | 15                          | 12  | 120       | 0   | 17                          | 136                         | 94             | 120       | 66              |
| Mizoram      | Aizawl                | NE    | Aizawl                  |              |                   |                     |                       | 5                    | 2   | 2                           | 2                               | 506                                       | 0               | 5   | 21                          | 8   | 507       | 0   | 10                          | 211                         | 48             | 507       | 39              |
|              | Champhai              | NE    | Champhai                |              |                   |                     |                       | 2                    | 2   | 2                           | 2                               | 202                                       | 0               | 5   | 5                           | 5   | 202       | 0   | 13                          | 37                          | 25             | 202       | 0               |
|              | Kolasib               | NE    | Kolasib                 |              |                   |                     |                       | 2                    | 2   | 2                           | 2                               | 202                                       | 0               | 5   | 5                           | 5   | 202       | 0   | 3                           | 141                         | 23             | 202       | 1               |
|              | Lunglei               | NE    | Lunglei                 |              |                   |                     |                       | 2                    | 2   | 2                           | 2                               | 192                                       | 1               | 5   | 5                           | 5   | 192       | 1   | 3                           | 21                          | 8              | 192       | 0               |
|              | Dimapur               | NE    | Dimapur                 |              |                   | NAC                 | 7                     | 2                    | 2   | 2                           | 610                             | 0   | 5               | 32  | 7                           | 610                                       | 0         | 15  | 247                         | 77                          | 610            | 174       |                 |
| Nagaland     | Kohima                | NE    | Kohima                  |              |                   | NAC                 | 2                     | 2                    | 2   | 2                           | 259                             | 0   | 5               | 12  | 5                           | 259                                       | 0         | 21  | 299                         | 94                          | 259            | 94        |                 |
|              |                       |       |                         |              |                   |                     |                       |                      |   |                             |                                 |   |                 |   |                             |   |           |   |                             |                             |                |           |                 |
| Odisha       | Angul                 | E     | Anugul                  |              | CPA               | NAC                 | 2                     | 6                    | 19  | 11                          | 204                             | 0   | 18              | 34  | 26                          | 204                                       | 0         | 34  | 223                         | 99                          | 204            | 98        |                 |
|              | Balasore              | E     | Balasore (Baleswar)     | Co           |                   | NAC                 | 3                     | 2                    | 9   | 4                           | 313                             | 0   | 10              | 14  | 11                          | 312                                       | 0         | 26  | 115                         | 86                          | 313            | 4         |                 |
|              | Berhampur             | E     | Ganjam                  | Co           |                   |                     | 1                     | 2                    | 11  | 4                           | 107                             | 0   | 13              | 46  | 19                          | 107                                       | 0         | 33  | 151                         | 65                          | 107            | 8         |                 |
|              | Bhubneshwar           | E     | Khordha                 |              |                   | NAC                 | 6                     | 2                    | 7   | 2                           | 553                             | 0   | 10              | 51  | 16                          | 552                                       | 0         | 38  | 244                         | 99                          | 554            | 227       |                 |
|              | Bonaigarh             | E     | Sundargarh              |              |                   |                     | 1                     | 5                    | 17  | 9                           | 104                             | 0   | 11              | 26  | 16                          | 104                                       | 0         | 58  | 209                         | 118                         | 104            | 62        |                 |
|              | Cuttack               | E     | Cuttack                 |              |                   | NAC                 | 3                     | 2                    | 35  | 6                           | 265                             | 0   | 13              | 38  | 20                          | 266                                       | 0         | 51  | 362                         | 106                         | 266            | 91        |                 |
|              | Jharsuguda            | E     | Jharsuguda              | CPA          |                   |                     | 3                     | 5                    | 29  | 8                           | 214                             | 0   | 11              | 43  | 16                          | 214                                       | 0         | 79  | 394                         | 106                         | 214            | 143       |                 |
|              | Kalinga Nagar         | E     | Jajapur (Jajpur)        |              |                   | NAC                 | 3                     | 2                    | 2   | 2                           | 132                             | 0   | 11              | 27  | 18                          | 132                                       | 0         | 27  | 438                         | 118                         | 132            | 83        |                 |
|              | Konark                | E     | Puri                    | Co           |                   |                     | 1                     | 2                    | 3   | 2                           | 101                             | 0   | 11              | 16  | 13                          | 101                                       | 0         | 50  | 102                         | 72                          | 101            | 2         |                 |
|              | Paradeep              | E     | Jagatsinghpur           | Co           | IA                |                     | 3                     | 9                    | 30  | 19                          | 285                             | 0   | 6               | 20  | 10                          | 285                                       | 0         | 69  | 343                         | 144                         | 285            | 232       |                 |
|              | Puri                  | E     | Puri                    | Co           |                   |                     | 2                     | 2                    | 6   | 2                           | 121                             | 0   | 13              | 22  | 15                          | 121                                       | 0         | 87  | 163                         | 112                         | 121            | 83        |                 |
|              | Rajgangpur            | E     | Sundargarh              |              |                   |                     | 1                     | 6                    | 23  | 12                          | 103                             | 0   | 11              | 37  | 19                          | 103                                       | 0         | 73  | 272                         | 150                         | 103            | 79        |                 |
|              | Rayagada              | E     | Rayagada                |              |                   |                     | 2                     | 2                    | 12  | 4                           | 205                             | 0   | 11              | 22  | 17                          | 205                                       | 0         | 15  | 118                         | 64                          | 205            | 5         |                 |
|              | Rourkela              | E     | Sundargarh (Sundargarh) |              |                   | NAC                 | 4                     | 4                    | 16  | 8                           | 416                             | 0   | 8               | 26  | 14                          | 416                                       | 0         | 52  | 242                         | 123                         | 416            | 197       |                 |
|              | Sambalpur             | E     | Sambalpur               |              |                   |                     | 1                     | 4                    | 36  | 6                           | 105                             | 0   | 19              | 46  | 24                          | 105                                       | 0         | 29  | 266                         | 92                          | 105            | 44        |                 |
|              | Talcher               | E     | Anugul                  | CPA          | NAC               | 2                   | 6                     | 14                   | 10  | 208                         | 0                               | 23  | 35              | 28  | 208                         | 0   | 35        | 209                                       | 106                         | 208                         | 109            |           |                 |

Chapter 2: Major findings – 2019

| States / UTs | City / town / village    | Zones | District                            | Coastal city | Industrial cities | Million plus cities | Non-attainment cities | No. of AAQM stations | SO <sub>2</sub>                    |     |                                 | NO <sub>2</sub>                    |    |                                 | PM <sub>10</sub>                   |     |                                 |     |     |     |     |     |    |
|--------------|--------------------------|-------|-------------------------------------|--------------|-------------------|---------------------|-----------------------|----------------------|------------------------------------|-----|---------------------------------|------------------------------------|----|---------------------------------|------------------------------------|-----|---------------------------------|-----|-----|-----|-----|-----|----|
|              |                          |       |                                     |              |                   |                     |                       |                      | Concentration in µg/m <sup>3</sup> |     | No. of observations in the year | Concentration in µg/m <sup>3</sup> |    | No. of observations in the year | Concentration in µg/m <sup>3</sup> |     | No. of observations in the year |     |     |     |     |     |    |
| Puducherry   | Karaikal                 | S     | Karaikal                            | Co           |                   |                     |                       | 3                    | 2                                  | 3   | 2                               | 262                                | 0  | 5                               | 11                                 | 5   | 261                             | 0   | 17  | 118 | 41  | 261 | 1  |
|              | Puducherry               | S     | Puducherry                          | Co           |                   |                     |                       | 3                    | 2                                  | 6   | 4                               | 264                                | 0  | 6                               | 17                                 | 12  | 264                             | 0   | 15  | 87  | 44  | 267 | 0  |
| Punjab       | Aligarh (Jagraon)        | N     | Ludhiana                            |              |                   |                     |                       | 1                    | 4                                  | 12  | 6                               | 103                                | 0  | 9                               | 37                                 | 17  | 103                             | 0   | 22  | 199 | 73  | 106 | 19 |
|              | Amritsar                 | N     | Amritsar                            |              | MP                | NAC                 | 2                     | 11                   | 19                                 | 13  | 122                             | 0                                  | 25 | 46                              | 34                                 | 122 | 0                               | 46  | 366 | 170 | 122 | 111 |    |
|              | Aspal Khurd (Tapa)       | N     | Barnala                             |              |                   |                     |                       | 1                    | 4                                  | 8   | 5                               | 123                                | 0  | 9                               | 18                                 | 12  | 124                             | 0   | 64  | 213 | 107 | 127 | 69 |
|              | Bara Pind (Goraya)       | N     | Jalandhar                           |              |                   |                     |                       | 1                    | 4                                  | 11  | 7                               | 83                                 | 0  | 10                              | 26                                 | 20  | 83                              | 0   | 53  | 338 | 150 | 85  | 60 |
|              | Bhatinda                 | N     | Bathinda                            |              |                   |                     |                       | 1                    | 2                                  | 8   | 5                               | 81                                 | 0  | 5                               | 21                                 | 13  | 84                              | 0   | 53  | 194 | 106 | 90  | 47 |
|              | Binjon (Garshankar)      | N     | Hoshiarpur                          |              |                   |                     |                       | 1                    | 4                                  | 24  | 7                               | 80                                 | 0  | 9                               | 19                                 | 14  | 80                              | 0   | 23  | 249 | 102 | 80  | 39 |
|              | Bishanpura (Payal)       | N     | Ludhiana                            |              |                   |                     |                       | 1                    | 4                                  | 20  | 10                              | 93                                 | 0  | 9                               | 39                                 | 21  | 93                              | 0   | 19  | 374 | 137 | 100 | 65 |
|              | Changal (Sangrur)        | N     | Sangrur                             |              |                   |                     |                       | 1                    | 4                                  | 7   | 5                               | 107                                | 0  | 6                               | 26                                 | 13  | 106                             | 0   | 53  | 240 | 105 | 122 | 52 |
|              | Chowkimann (Jagraon)     | N     | Ludhiana                            |              |                   |                     |                       | 1                    | 4                                  | 12  | 7                               | 102                                | 0  | 9                               | 32                                 | 19  | 102                             | 0   | 20  | 170 | 68  | 108 | 16 |
|              | Dera Baba Nanak          | N     | Pathankot                           |              |                   | NAC                 | 1                     | 3                    | 9                                  | 7   | 68                              | 0                                  | 11 | 17                              | 13                                 | 67  | 0                               | 25  | 199 | 70  | 68  | 7   |    |
|              | Dera Bassi               | N     | Ajitgarh/Sahibzada Ajit Singh Nagar |              |                   | NAC                 | 2                     | 4                    | 8                                  | 6   | 220                             | 0                                  | 9  | 26                              | 13                                 | 221 | 0                               | 41  | 174 | 97  | 220 | 83  |    |
|              | Fatehpur (Samana)        | N     | Patiala                             |              |                   |                     |                       | 1                    | 4                                  | 7   | 5                               | 38                                 | 0  | 10                              | 13                                 | 11  | 38                              | 0   | 79  | 107 | 95  | 38  | 11 |
|              | Gobindgarh               | N     | Fatehgarh Sahib                     | CPA          | NAC               | 3                   | 5                     | 9                    | 7                                  | 389 | 0                               | 13                                 | 98 | 36                              | 389                                | 1   | 84                              | 238 | 142 | 391 | 364 |     |    |
|              | Guru Ki Dhab (Kotkapura) | N     | Faridkot                            |              |                   |                     |                       | 1                    | 2                                  | 8   | 5                               | 22                                 | 0  | 7                               | 26                                 | 13  | 22                              | 0   | 74  | 212 | 124 | 22  | 17 |
|              | Jaito Sarja (Batala)     | N     | Gurdaspur                           |              |                   |                     |                       | 1                    | 4                                  | 7   | 6                               | 37                                 | 0  | 11                              | 18                                 | 14  | 37                              | 0   | 21  | 109 | 60  | 37  | 3  |
|              | Jalandhar                | N     | Jalandhar                           | IA           | NAC               | 4                   | 5                     | 24                   | 11                                 | 276 | 0                               | 12                                 | 49 | 24                              | 275                                | 0   | 35                              | 329 | 137 | 276 | 201 |     |    |
|              | Khanna                   | N     | Ludhiana                            |              | NAC               | 2                   | 5                     | 64                   | 11                                 | 229 | 0                               | 7                                  | 73 | 26                              | 228                                | 0   | 45                              | 368 | 165 | 231 | 200 |     |    |

Chapter 2: Major findings – 2019

| States / UTS                | City / town / village      | Zones                       | District                               | Coastal city | Industrial cities | Million plus cities | Non-attainment cities       | No. of AAQM stations | SO <sub>2</sub>                           |                |                                 | NO <sub>2</sub>                           |                 |                                 | PM <sub>10</sub>                          |                             |                                 |   |     |                                 |     |     |    |
|-----------------------------|----------------------------|-----------------------------|--|--------------|-------------------|---------------------|-----------------------------|----------------------|---|----------------|---------------------------------|---|-----------------|---------------------------------|---|-----------------------------|---------------------------------|---|-----|---------------------------------|-----|-----|----|
|                             |                            |                             |  |              |                   |                     |                             |                      | Concentration in $\mu\text{g}/\text{m}^3$ |                | No. of observations in the year | Concentration in $\mu\text{g}/\text{m}^3$ |                 | No. of observations in the year | Concentration in $\mu\text{g}/\text{m}^3$ |                             | No. of observations in the year | Concentration in $\mu\text{g}/\text{m}^3$ |     | No. of observations in the year |     |     |    |
| Minimum (24-hourly average) |                            | Maximum (24-hourly average) | Annual Average                         | Monitored    |                   | Exceeding NAAQS     | Minimum (24-hourly average) |                      | Maximum (24-hourly average)               | Annual Average | Monitored                       |   | Exceeding NAAQS | Minimum (24-hourly average)     |   | Maximum (24-hourly average) | Annual Average                  | Monitored                                 |     | Exceeding NAAQS                 |     |     |    |
| Punjab                      | Kharaori (Sirhind)         | N                           | Fatehgarh Sahib                        |              |                   |                     |                             | 1                    | 4   | 8              | 6                               | 126                                       | 0               | 10                              | 29  | 13                          | 126                             | 0   | 68  | 190                             | 100 | 128 | 45 |
|                             | Kotladoom (Ajnala)         | N                           | Amritsar                               |              |                   |                     |                             | 1                    | 5   | 8              | 7                               | 62  | 0               | 11                              | 18  | 13                          | 62                              | 0   | 49  | 395                             | 128 | 62  | 35 |
|                             | Lakho ke Behram (Ferozpur) | N                           | Ferozpur                               |              |                   |                     |                             | 1                    | 3   | 6              | 4                               | 11  | 0               | 5                               | 12  | 8                           | 11                              | 0   | 73  | 169                             | 114 | 11  | 7  |
|                             | Ludhiana                   | N                           | Ludhiana                               | CPA          | MP                | NAC                 | 4                           | 5                    | 64  | 12             | 511                             | 0   | 5               | 86                              | 26  | 514                         | 1                               | 33  | 498 | 153                             | 522 | 407 |    |
|                             | Mrar Kalan (Muktsar)       | N                           | Muktsar                                |              |                   |                     |                             | 1                    | 4   | 9              | 5                               | 40  | 0               | 10                              | 26  | 14                          | 42                              | 0   | 55  | 228                             | 111 | 66  | 35 |
|                             | Mukandpur (Nawashahar)     | N                           | Nawashahar / Shahid Bhagat Singh Nagar |              |                   |                     |                             | 1                    | 5   | 12             | 8                               | 78  | 0               | 13                              | 26  | 17                          | 78                              | 0   | 58  | 247                             | 134 | 78  | 57 |
|                             | Mureedke (Batala)          | N                           | Gurdaspur                              |              |                   |                     |                             | 1                    | 4   | 10             | 7                               | 98  | 0               | 8                               | 18  | 12                          | 98                              | 0   | 21  | 142                             | 87  | 98  | 45 |
|                             | Naudhrani (Malerkotla)     | N                           | Sangrur                                |              |                   |                     |                             | 1                    | 4   | 8              | 5                               | 106                                       | 0               | 9                               | 25  | 13                          | 104                             | 0   | 55  | 198                             | 108 | 127 | 69 |
|                             | Naya Nangal                | N                           | Ropar/Rupnagar                         |              |                   | NAC                 | 2                           | 4                    | 8   | 6              | 196                             | 0   | 9               | 23                              | 12  | 203                         | 0                               | 39  | 159 | 90                              | 201 | 57  |    |
|                             | Patiala                    | N                           | Patiala                                |              |                   | NAC                 | 2                           | 4                    | 8   | 5              | 264                             | 0   | 9               | 30                              | 12  | 260                         | 0                               | 74  | 197 | 102                             | 263 | 85  |    |
|                             | Peer Mohammad (Jalalabad)  | N                           | Fazilka                                |              |                   |                     |                             | 1                    | 4   | 6              | 5                               | 26  | 0               | 10                              | 13  | 12                          | 23                              | 0   | 69  | 133                             | 102 | 41  | 23 |
|                             | Poohli (Bhatinda)          | N                           | Bathinda                               |              |                   |                     |                             | 1                    | 4   | 7              | 5                               | 21  | 0               | 10                              | 26  | 15                          | 23                              | 0   | 64  | 337                             | 114 | 57  | 29 |
|                             | Qila Bharian (Sangrur)     | N                           | Sangrur                                |              |                   |                     |                             | 1                    | 4   | 8              | 5                               | 112                                       | 0               | 10                              | 27  | 13                          | 112                             | 0   | 49  | 178                             | 104 | 135 | 69 |
|                             | Rakhra (Patiala)           | N                           | Patiala                                |              |                   |                     |                             | 1                    | 5   | 7              | 5                               | 53  | 0               | 11                              | 13  | 12                          | 53                              | 0   | 64  | 129                             | 98  | 53  | 24 |
|                             | Rohila (Samrala)           | N                           | Ludhiana                               |              |                   |                     |                             | 1                    | 5   | 19             | 10                              | 120                                       | 0               | 9                               | 42  | 20                          | 120                             | 0   | 21  | 575                             | 159 | 123 | 94 |
|                             | Tirathpur (Amritsar I)     | N                           | Amritsar                               |              |                   |                     |                             | 1                    | 5   | 8              | 7                               | 58  | 0               | 10                              | 14  | 13                          | 58                              | 0   | 25  | 202                             | 93  | 58  | 18 |
| Rajasthan                   | Alwar                      | W                           | Alwar                                  |              |                   | NAC                 | 3                           | 6                    | 18  | 12             | 306                             | 0   | 22              | 45                              | 34  | 306                         | 0                               | 72  | 349 | 172                             | 306 | 286 |    |
|                             | Bharatpur                  | W                           | Bharatpur                              |              |                   |                     | 3                           | 6                    | 12  | 8              | 300                             | 0   | 5               | 38                              | 26  | 298                         | 0                               | 61  | 561 | 200                             | 296 | 278 |    |
|                             | Bhiwadi                    | W                           | Alwar                                  | CPA          |                   |                     | 3                           | 6                    | 63  | 26             | 236                             | 0   | 12              | 79                              | 46  | 236                         | 0                               | 101                                       | 442 | 255                             | 238 | 238 |    |
|                             | Chittorgarh                | W                           | Chittorgarh                            |              |                   |                     | 3                           | 4                    | 20  | 7              | 296                             | 0   | 14              | 91                              | 26  | 296                         | 3                               | 31  | 311 | 142                             | 292 | 207 |    |
|                             | Jaipur                     | W                           | Jaipur                                 | IA           | MP                | NAC                 | 9                           | 4                    | 31  | 7              | 933                             | 0   | 5               | 72                              | 27  | 933                         | 0                               | 34  | 498 | 141                             | 933 | 739 |    |
|                             | Jodhpur                    | W                           | Jodhpur                                | CPA          | MP                | NAC                 | 9                           | 3                    | 23  | 7              | 650                             | 0   | 10              | 58                              | 26  | 650                         | 0                               | 46  | 973 | 240                             | 644 | 588 |    |
|                             | Kota                       | W                           | Kota                                   |              | MP                | NAC                 | 6                           | 5                    | 13  | 7              | 626                             | 0   | 18              | 45                              | 24  | 626                         | 0                               | 19  | 382 | 129                             | 626 | 421 |    |

Chapter 2: Major findings – 2019

| States / UTS | City / town / village | Zones | District         | Coastal city | Industrial cities | Million plus cities | Non-attainment cities | No. of AAQM stations | SO <sub>2</sub>                    |                             |                                 | NO <sub>2</sub>                    |                 |                                    | PM <sub>10</sub>            |                                    |           |                 |                             |                             |                  |           |                 |
|--------------|-----------------------|-------|------------------|--------------|-------------------|---------------------|-----------------------|----------------------|------------------------------------|-----------------------------|---------------------------------|------------------------------------|-----------------|------------------------------------|-----------------------------|------------------------------------|-----------|-----------------|-----------------------------|-----------------------------|------------------|-----------|-----------------|
|              |                       |       |                  |              |                   |                     |                       |                      | Concentration in µg/m <sup>3</sup> |                             | No. of observations in the year | Concentration in µg/m <sup>3</sup> |                 | Concentration in µg/m <sup>3</sup> |                             | Concentration in µg/m <sup>3</sup> |           |                 |                             |                             |                  |           |                 |
|              |                       |       |                  |              |                   |                     |                       |                      | Minimum (24-hourly average)        | Maximum (24-hourly average) | Annual Average                  | Monitored                          | Exceeding NAAQS | Minimum (24-hourly average)        | Maximum (24-hourly average) | Annual Average                     | Monitored | Exceeding NAAQS | Minimum (24-hourly average) | Maximum (24-hourly average) | Annual Average   | Monitored | Exceeding NAAQS |
| Sikkim       | Udaipur               | W     | Udaipur          |              |                   |                     | NAC                   | 3                    | 3                                  | 26                          | 11                              | 312                                | 0               | 11                                 | 53                          | 31                                 | 312       | 0               | 55                          | 258                         | 156              | 312       | 268             |
|              | Chungthang            | NE    | North Sikkim     |              |                   |                     |                       | 1                    | 3                                  | 10                          | 5                               | 90                                 | 0               | 5                                  | 5                           | 5                                  | 90        | 0               | 16                          | 47                          | 28               | 90        | 0               |
|              | Gangtok               | NE    | East Sikkim      |              |                   |                     |                       | 2                    | 4                                  | 10                          | 6                               | 77                                 | 0               | 5                                  | 25                          | 10                                 | 77        | 0               | 21                          | 83                          | 49               | 75        | 0               |
|              | Mangan                | NE    | North Sikkim     |              |                   |                     |                       | 1                    | 3                                  | 7                           | 5                               | 101                                | 0               | 5                                  | 8                           | 5                                  | 101       | 0               | 13                          | 62                          | 34               | 101       | 0               |
|              | Namchi                | NE    | South Sikkim     |              |                   |                     |                       | 1                    | 4                                  | 7                           | 6                               | 99                                 | 0               | 5                                  | 8                           | 5                                  | 99        | 0               | 22                          | 856                         | 41               | 98        | 1               |
|              | Pelling               | NE    | Pelling          |              |                   |                     |                       | 1                    | 2                                  | 11                          | 5                               | 94                                 | 0               | 5                                  | 11                          | 5                                  | 93        | 0               | 9                           | 77                          | 28               | 89        | 0               |
|              | Rangpo                | NE    | East Sikkim      |              |                   |                     |                       | 1                    | 3                                  | 16                          | 8                               | 94                                 | 0               | 5                                  | 18                          | 8                                  | 94        | 0               | 30                          | 100                         | 64               | 94        | 0               |
|              | Ravangla              | NE    | South Sikkim     |              |                   |                     |                       | 1                    | 2                                  | 28                          | 5                               | 99                                 | 0               | 5                                  | 8                           | 5                                  | 98        | 0               | 13                          | 38                          | 25               | 95        | 0               |
|              | Singtam               | NE    | East Sikkim      |              |                   |                     |                       | 1                    | 4                                  | 8                           | 6                               | 93                                 | 0               | 5                                  | 8                           | 6                                  | 93        | 0               | 33                          | 70                          | 54               | 93        | 0               |
| Tamilnadu    | Chennai               | S     | Chennai          | Co           | MP                |                     | 11                    | 2                    | 50                                 | 9                           | 749                             | 0                                  | 5               | 68                                 | 19                          | 740                                | 0         | 11              | 231                         | 73                          | 767              | 109       |                 |
|              | Coimbatore            | S     | Coimbatore       |              | MP                |                     |                       | 3                    | 4                                  | 72                          | 7                               | 232                                | 0               | 14                                 | 25                          | 18                                 | 232       | 0               | 13                          | 204                         | 57               | 227       | 16              |
|              | Cuddalore             | S     | Cuddalore        | Co           | CPA               |                     |                       | 3                    | 9                                  | 18                          | 13                              | 251                                | 0               | 15                                 | 25                          | 19                                 | 250       | 0               | 41                          | 280                         | 55               | 250       | 2               |
|              | Madurai               | S     | Madurai          |              |                   | MP                  |                       | 3                    | 9                                  | 16                          | 13                              | 212                                | 0               | 13                                 | 23                          | 18                                 | 212       | 0               | 31                          | 144                         | 79               | 212       | 38              |
|              | Mettur                | S     | Salem            |              | IA                |                     |                       | 2                    | 5                                  | 10                          | 6                               | 156                                | 0               | 17                                 | 36                          | 22                                 | 156       | 0               | 17                          | 244                         | 55               | 155       | 19              |
|              | Salem                 | S     | Salem            |              |                   |                     |                       | 1                    | 4                                  | 26                          | 7                               | 77                                 | 0               | 8                                  | 42                          | 21                                 | 77        | 0               | 21                          | 183                         | 50               | 77        | 2               |
|              | Trichy                | S     | Tiruchirappalli  |              |                   | MP                  | NAC                   | 5                    | 8                                  | 19                          | 13                              | 351                                | 0               | 12                                 | 24                          | 18                                 | 351       | 0               | 18                          | 148                         | 73               | 350       | 78              |
|              | Tuticorin             | S     | Thoothukudi      | Co           |                   |                     | NAC                   | 3                    | 6                                  | 16                          | 11                              | 221                                | 0               | 7                                  | 22                          | 11                                 | 221       | 0               | 41                          | 127                         | 86               | 220       | 31              |
| Telangana    | Adilabad              | S     | Adilabad         |              |                   |                     |                       | 1                    | 4                                  | 7                           | 5                               | 108                                | 0               | 23                                 | 27                          | 25                                 | 108       | 0               | 50                          | 85                          | 74               | 108       | 0               |
|              | Hyderabad             | S     | Hyderabad        |              | MP                | NAC                 | 10                    | 2                    | 13                                 | 5                           | 104 <sub>3</sub>                | 0                                  | 5               | 141                                | 37                          | 1074                               | 23        | 3               | 386                         | 99                          | 109 <sub>1</sub> | 489       |                 |
|              | Karimnagar            | S     | Karimnagar       |              |                   |                     |                       | 1                    | 6                                  | 14                          | 9                               | 87                                 | 0               | 45                                 | 68                          | 55                                 | 86        | 0               | 87                          | 140                         | 106              | 95        | 73              |
|              | Khammam               | S     | Khammam          |              |                   |                     |                       | 2                    | 6                                  | 14                          | 9                               | 202                                | 0               | 28                                 | 74                          | 52                                 | 203       | 0               | 72                          | 118                         | 91               | 203       | 29              |
|              | Kothur                | S     | Mahabubnagar     |              |                   |                     |                       | 1                    | 7                                  | 13                          | 9                               | 104                                | 0               | 47                                 | 67                          | 59                                 | 104       | 0               | 92                          | 141                         | 111              | 105       | 97              |
|              | Nalgonda              | S     | Nalgonda         |              |                   | NAC                 | 2                     | 3                    | 7                                  | 5                           | 198                             | 0                                  | 23              | 29                                 | 25                          | 198                                | 0         | 48              | 75                          | 59                          | 198              | 0         |                 |
|              | Nizamabad             | S     | Nizamabad        |              |                   |                     |                       | 1                    | 4                                  | 6                           | 5                               | 99                                 | 0               | 23                                 | 27                          | 25                                 | 99        | 0               | 53                          | 72                          | 63               | 99        | 0               |
|              | Patancheru            | S     | Medak            | CPA          |                   | NAC                 | 1                     | 4                    | 7                                  | 5                           | 93                              | 0                                  | 22              | 28                                 | 25                          | 93                                 | 0         | 45              | 106                         | 83                          | 96               | 9         |                 |
|              | Ramagundam            | S     | Karimnagar       |              |                   |                     |                       | 1                    | 7                                  | 13                          | 9                               | 98                                 | 0               | 45                                 | 65                          | 55                                 | 97        | 0               | 61                          | 144                         | 107              | 100       | 81              |
|              | Sangareddy            | S     | Sangareddy       |              |                   | NAC                 | 3                     | 2                    | 52                                 | 6                           | 315                             | 0                                  | 7               | 109                                | 30                          | 301                                | 4         | 12              | 381                         | 87                          | 313              | 66        |                 |
|              | Warangal              | S     | Warangal (Urban) |              |                   |                     |                       | 2                    | 6                                  | 11                          | 9                               | 197                                | 0               | 33                                 | 66                          | 52                                 | 197       | 0               | 57                          | 110                         | 88               | 209       | 7               |

Chapter 2: Major findings – 2019

| States / UTS  | City / town / village | Zones | District            | Coastal city | Industrial cities | Million plus cities | Non-attainment cities | No. of AAQM stations | SO <sub>2</sub>                    |                                 |                                    | NO <sub>2</sub>                 |                                    |                                 | PM <sub>10</sub>                   |                                 |           |                 |                             |                             |                |           |                 |
|---------------|-----------------------|-------|---------------------|--------------|-------------------|---------------------|-----------------------|----------------------|------------------------------------|---------------------------------|------------------------------------|---------------------------------|------------------------------------|---------------------------------|------------------------------------|---------------------------------|-----------|-----------------|-----------------------------|-----------------------------|----------------|-----------|-----------------|
|               |                       |       |                     |              |                   |                     |                       |                      | Concentration in μg/m <sup>3</sup> | No. of observations in the year | Concentration in μg/m <sup>3</sup> | No. of observations in the year | Concentration in μg/m <sup>3</sup> | No. of observations in the year | Concentration in μg/m <sup>3</sup> | No. of observations in the year |           |                 |                             |                             |                |           |                 |
| Tripura       | Agartala              | NE    | West Tripura        |              |                   |                     |                       | 2                    | 2                                  | 6                               | 4                                  | 166                             | 0                                  | 8                               | 16                                 | 11                              | 166       | 0               | 28                          | 125                         | 77             | 166       | 62              |
|               |                       |       |                     |              |                   |                     |                       |                      | Minimum (24-hourly average)        | Maximum (24-hourly average)     | Annual Average                     | Monitored                       | Exceeding NAAQS                    | Minimum (24-hourly average)     | Maximum (24-hourly average)        | Annual Average                  | Monitored | Exceeding NAAQS | Minimum (24-hourly average) | Maximum (24-hourly average) | Annual Average | Monitored | Exceeding NAAQS |
| Uttar Pradesh | Agra                  | N     | Agra                | CPA          | MP                | NAC                 | 6                     | 2                    | 35                                 | 4                               | 805                                | 0                               | 5                                  | 71                              | 24                                 | 863                             | 0         | 13              | 509                         | 186                         | 850            | 613       |                 |
|               | Allahabad             | N     | Allahabad           |              | MP                | NAC                 | 5                     | 2                    | 19                                 | 5                               | 425                                | 0                               | 7                                  | 88                              | 42                                 | 490                             | 1         | 80              | 488                         | 222                         | 490            | 481       |                 |
|               | Anpara                | N     | Sonbhadra           |              |                   | NAC                 | 2                     | 10                   | 22                                 | 17                              | 192                                | 0                               | 19                                 | 32                              | 29                                 | 192                             | 0         | 41              | 287                         | 171                         | 204            | 189       |                 |
|               | Baghpat               | N     | Baghpat             |              |                   |                     | 2                     | 6                    | 37                                 | 11                              | 189                                | 0                               | 10                                 | 57                              | 21                                 | 187                             | 0         | 73              | 480                         | 171                         | 188            | 182       |                 |
|               | Bareily               | N     | Bareilly            |              |                   | NAC                 | 2                     | 10                   | 62                                 | 27                              | 214                                | 0                               | 18                                 | 65                              | 32                                 | 214                             | 0         | 79              | 679                         | 200                         | 214            | 193       |                 |
|               | Firozabad             | N     | Firozabad           | IA           |                   | NAC                 | 3                     | 6                    | 12                                 | 8                               | 311                                | 0                               | 17                                 | 42                              | 31                                 | 311                             | 0         | 54              | 488                         | 214                         | 309            | 267       |                 |
|               | Gajraula              | N     | Amroha              |              |                   | NAC                 | 2                     | 8                    | 50                                 | 25                              | 185                                | 0                               | 14                                 | 67                              | 38                                 | 186                             | 0         | 96              | 421                         | 229                         | 183            | 182       |                 |
|               | Ghaziabad             | N     | Ghaziabad           | CPA          | MP                | NAC                 | 4                     | 5                    | 35                                 | 13                              | 351                                | 0                               | 10                                 | 85                              | 35                                 | 351                             | 2         | 46              | 694                         | 208                         | 351            | 324       |                 |
|               | Gorakpur              | N     | Gorakhpur           |              |                   |                     | 3                     | 2                    | 62                                 | 22                              | 286                                | 0                               | 10                                 | 80                              | 35                                 | 286                             | 1         | 103             | 443                         | 294                         | 286            | 286       |                 |
|               | Greater Noida         | N     | Gautam Buddha Nagar |              |                   |                     | 2                     | 6                    | 48                                 | 12                              | 176                                | 0                               | 9                                  | 87                              | 26                                 | 176                             | 2         | 91              | 501                         | 190                         | 176            | 173       |                 |
|               | Hapur                 | N     | Hapur               |              |                   |                     | 2                     | 5                    | 28                                 | 15                              | 159                                | 0                               | 13                                 | 42                              | 25                                 | 159                             | 0         | 51              | 577                         | 228                         | 159            | 138       |                 |
|               | Jhansi                | N     | Jhansi              |              |                   | NAC                 | 2                     | 3                    | 20                                 | 6                               | 234                                | 0                               | 9                                  | 33                              | 18                                 | 233                             | 0         | 24              | 237                         | 96                          | 234            | 109       |                 |
|               | Kanpur                | N     | Kanpur Nagar        | CPA          | MP                | NAC                 | 9                     | 2                    | 20                                 | 6                               | 773                                | 0                               | 7                                  | 75                              | 40                                 | 890                             | 0         | 11              | 746                         | 198                         | 822            | 704       |                 |
|               | Khurja                | N     | Bulandshahr         | IA           |                   | NAC                 | 2                     | 19                   | 26                                 | 21                              | 187                                | 0                               | 18                                 | 24                              | 20                                 | 187                             | 0         | 19              | 401                         | 195                         | 195            | 162       |                 |
|               | Lucknow               | N     | Lucknow             |              | MP                | NAC                 | 8                     | 2                    | 19                                 | 7                               | 181                                | 0                               | 16                                 | 70                              | 31                                 | 1831                            | 0         | 29              | 464                         | 208                         | 183            | 162       |                 |
|               | Mathura               | N     | Mathura             | IA           |                   |                     | 2                     | 8                    | 17                                 | 12                              | 164                                | 0                               | 17                                 | 40                              | 27                                 | 164                             | 0         | 110             | 191                         | 161                         | 163            | 163       |                 |
|               | Meerut                | N     | Meerut              | IA           | MP                |                     | 2                     | 7                    | 12                                 | 9                               | 118                                | 0                               | 40                                 | 85                              | 63                                 | 118                             | 25        | 189             | 237                         | 213                         | 118            | 118       |                 |
|               | Moradabad             | N     | Moradabad           | IA           |                   | NAC                 | 2                     | 5                    | 60                                 | 26                              | 181                                | 0                               | 11                                 | 83                              | 42                                 | 181                             | 2         | 61              | 464                         | 240                         | 181            | 180       |                 |
|               | Muzaffarnagar         | N     | Muzaffarnagar       |              |                   |                     | 2                     | 6                    | 15                                 | 8                               | 194                                | 0                               | 14                                 | 51                              | 34                                 | 194                             | 0         | 47              | 417                         | 190                         | 194            | 173       |                 |
|               | Noida                 | N     | Gautam Buddha Nagar | CPA          |                   | NAC                 | 4                     | 5                    | 39                                 | 13                              | 375                                | 0                               | 10                                 | 147                             | 44                                 | 375                             | 45        | 47              | 107                         | 212                         | 375            | 341       |                 |
|               | Raebareli             | N     | Raebareli           |              |                   | NAC                 | 3                     | 7                    | 16                                 | 11                              | 162                                | 0                               | 13                                 | 21                              | 17                                 | 162                             | 0         | 80              | 394                         | 163                         | 162            | 150       |                 |
|               | Saharanpur            | N     | Saharanpur          |              |                   |                     | 2                     | 9                    | 25                                 | 16                              | 183                                | 0                               | 18                                 | 27                              | 24                                 | 183                             | 0         | 50              | 344                         | 166                         | 183            | 162       |                 |
|               | Unnao                 | N     | Unnao               |              |                   |                     | 2                     | 7                    | 11                                 | 9                               | 148                                | 0                               | 24                                 | 30                              | 27                                 | 148                             | 0         | 79              | 185                         | 135                         | 176            | 138       |                 |
|               | Varanasi              | N     | Varanasi            | CPA          | MP                | NAC                 | 5                     | 3                    | 16                                 | 9                               | 561                                | 0                               | 7                                  | 84                              | 35                                 | 561                             | 5         | 41              | 388                         | 184                         | 561            | 478       |                 |

Chapter 2: Major findings – 2019

| States / UTS | City / town / village | Zones | District           | Coastal city | Industrial cities | Million plus cities | Non-attainment cities | No. of AAQM stations | SO <sub>2</sub>                           |                             |                                 | NO <sub>2</sub>                           |           |                                 | PM <sub>10</sub>                          |                             |                                 |           |                 |     |     |     |     |
|--------------|-----------------------|-------|--------------------|--------------|-------------------|---------------------|-----------------------|----------------------|---|-----------------------------|---------------------------------|---|-----------|---------------------------------|---|-----------------------------|---------------------------------|-----------|-----------------|-----|-----|-----|-----|
|              |                       |       |                    |              |                   |                     |                       |                      | Concentration in $\mu\text{g}/\text{m}^3$ |                             | No. of observations in the year | Concentration in $\mu\text{g}/\text{m}^3$ |           | No. of observations in the year | Concentration in $\mu\text{g}/\text{m}^3$ |                             | No. of observations in the year |           |                 |     |     |     |     |
|              |                       |       |                    |              |                   |                     |                       |                      |   | Minimum (24-hourly average) | Maximum (24-hourly average)     | Annual Average                            | Monitored | Exceeding NAAQS                 | Minimum (24-hourly average)               | Maximum (24-hourly average) | Annual Average                  | Monitored | Exceeding NAAQS |     |     |     |     |
| Uttarakhand  | Dehradun              | N     | Dehradun           |              |                   |                     | NAC                   | 3                    | 21  | 28                          | 25                              | 206                                       | 0         | 26                              | 32  | 29                          | 207                             | 0         | 93              | 260 | 167 | 207 | 205 |
|              | Haldwani              | N     | Nainital           |              |                   |                     |                       | 1                    | 5   | 32                          | 8                               | 103                                       | 0         | 21                              | 46  | 28                          | 103                             | 0         | 92              | 218 | 111 | 103 | 97  |
|              | Haridwar              | N     | Haridwar           |              | IA                |                     |                       | 1                    | 16  | 23                          | 20                              | 66  | 0         | 20                              | 27  | 24                          | 66                              | 0         | 104             | 161 | 131 | 78  | 78  |
|              | Kashipur              | N     | Udham Singh Nagar  |              |                   |                     | NAC                   | 1                    | 13  | 24                          | 14                              | 97  | 0         | 22                              | 31  | 23                          | 97                              | 0         | 109             | 236 | 132 | 70  | 70  |
|              | Rishikesh             | N     | Dehradun           |              |                   |                     | NAC                   | 1                    | 19  | 25                          | 22                              | 78  | 0         | 25                              | 29  | 27                          | 78                              | 0         | 99              | 215 | 137 | 82  | 80  |
|              | Rudrapur              | N     | Udham Singh Nagar  |              |                   |                     |                       | 1                    | 12  | 23                          | 14                              | 87  | 0         | 21                              | 30  | 23                          | 87                              | 0         | 110             | 277 | 132 | 72  | 72  |
| West Bengal  | Alipurduar            | E     | Alipurduar         |              |                   |                     |                       | 3                    | 2   | 13                          | 7                               | 309                                       | 0         | 13                              | 50  | 33                          | 309                             | 0         | 43              | 210 | 80  | 309 | 52  |
|              | Amtala                | E     | South 24 Parganas  |              |                   |                     |                       | 1                    | 2   | 12                          | 7                               | 104                                       | 0         | 26                              | 53  | 40                          | 104                             | 0         | 33              | 254 | 84  | 104 | 28  |
|              | Asansol               | E     | Paschim Bardhaman  | CPA          | MP                | NAC                 | 3                     | 7                    | 19  | 15                          | 312                             | 0   | 23        | 55                              | 44  | 312                         | 0                               | 84        | 262             | 184 | 312 | 307 |     |
|              | Baharampur            | E     | Murshidabad        |              |                   |                     |                       | 1                    | 2   | 22                          | 7                               | 104                                       | 0         | 16                              | 49  | 25                          | 104                             | 0         | 67              | 455 | 107 | 104 | 52  |
|              | Balurghat             | E     | Dakshin Dinajpur   |              |                   |                     |                       | 1                    | 2   | 12                          | 6                               | 104                                       | 0         | 13                              | 50  | 33                          | 104                             | 0         | 47              | 217 | 89  | 104 | 24  |
|              | Bankura               | E     | Bankura            |              |                   |                     |                       | 1                    | 2   | 14                          | 2                               | 104                                       | 0         | 14                              | 32  | 20                          | 104                             | 0         | 61              | 141 | 99  | 104 | 46  |
|              | Barasat               | E     | North 24 Parganas  |              |                   |                     |                       | 1                    | 2   | 20                          | 8                               | 103                                       | 0         | 11                              | 50  | 27                          | 103                             | 0         | 57              | 567 | 118 | 103 | 69  |
|              | Bardhaman             | E     | Purba Bardhaman    |              |                   |                     |                       | 1                    | 2   | 14                          | 2                               | 104                                       | 0         | 15                              | 33  | 20                          | 104                             | 0         | 63              | 136 | 103 | 104 | 64  |
|              | Barrackpore           | E     | North 24 Parganas  |              |                   |                     | NAC                   | 3                    | 2   | 21                          | 8                               | 310                                       | 0         | 15                              | 53  | 28                          | 310                             | 0         | 69              | 445 | 115 | 310 | 224 |
|              | Baruipur              | E     | South 24 Parganas  |              |                   |                     |                       | 1                    | 2   | 16                          | 7                               | 104                                       | 0         | 28                              | 58  | 40                          | 104                             | 0         | 28              | 270 | 87  | 104 | 31  |
|              | Bolpur                | E     | Birbhum            |              |                   |                     |                       | 1                    | 2   | 15                          | 2                               | 104                                       | 0         | 15                              | 33  | 20                          | 104                             | 0         | 62              | 140 | 98  | 104 | 49  |
|              | Chinsura              | E     | Hooghly            |              |                   |                     |                       | 1                    | 2   | 18                          | 7                               | 104                                       | 0         | 15                              | 47  | 26                          | 104                             | 0         | 53              | 324 | 112 | 104 | 61  |
|              | Coochbehar            | E     | Cooch Behar        |              |                   |                     |                       | 2                    | 2   | 14                          | 7                               | 208                                       | 0         | 13                              | 49  | 33                          | 208                             | 0         | 44              | 179 | 79  | 208 | 37  |
|              | Dankuni               | E     | Hooghly            |              |                   |                     |                       | 1                    | 2   | 18                          | 7                               | 104                                       | 0         | 13                              | 44  | 25                          | 104                             | 0         | 58              | 349 | 107 | 104 | 56  |
|              | Darjeeling            | E     | Darjeeling         |              |                   |                     |                       | 1                    | 2   | 10                          | 5                               | 104                                       | 0         | 13                              | 45  | 30                          | 104                             | 0         | 42              | 85  | 57  | 104 | 0   |
|              | Durgapur              | E     | Paschim Bardhaman  | IA           |                   | NAC                 | 4                     | 2                    | 22  | 14                          | 415                             | 0   | 20        | 56                              | 41  | 415                         | 0                               | 87        | 272             | 173 | 415 | 410 |     |
|              | Ghatal                | E     | Paschim Medinipore |              |                   |                     |                       | 1                    | 2   | 22                          | 10                              | 107                                       | 0         | 30                              | 48  | 39                          | 107                             | 0         | 39              | 278 | 93  | 107 | 35  |
|              | Haldia                | E     | Purba Medinipore   | Co           | CPA               |                     | NAC                   | 4                    | 2   | 22                          | 9                               | 424                                       | 0         | 28                              | 50  | 38                          | 424                             | 0         | 33              | 280 | 86  | 424 | 119 |

Chapter 2: Major findings – 2019

| States / UTS | City / town / village | Zones | District           | Coastal city | Industrial cities | Million plus cities | Non-attainment cities | No. of AAQM stations | SO <sub>2</sub>                           |                             |                                 | NO <sub>2</sub>                           |                 |   | PM <sub>10</sub>            |   |           |                 |     |     |          |     |     |
|--------------|-----------------------|-------|--------------------|--------------|-------------------|---------------------|-----------------------|----------------------|---|-----------------------------|---------------------------------|---|-----------------|---|-----------------------------|---|-----------|-----------------|-----|-----|----------|-----|-----|
|              |                       |       |                    |              |                   |                     |                       |                      | Concentration in $\mu\text{g}/\text{m}^3$ |                             | No. of observations in the year | Concentration in $\mu\text{g}/\text{m}^3$ |                 | Concentration in $\mu\text{g}/\text{m}^3$ |                             | Concentration in $\mu\text{g}/\text{m}^3$ |           |                 |     |     |          |     |     |
|              |                       |       |                    |              |                   |                     |                       |                      | Minimum (24-hourly average)               | Maximum (24-hourly average) | Annual Average                  | Monitored                                 | Exceeding NAAQS | Minimum (24-hourly average)               | Maximum (24-hourly average) | Annual Average                            | Monitored | Exceeding NAAQS |     |     |          |     |     |
| West Bengal  | Howrah                | E     | Howrah             |              | CPA               |                     | NAC                   | 4                    | 3   | 26                          | 12                              | 420                                       | 0               | 30  | 57                          | 40  | 420       | 0               | 44  | 453 | 174      | 420 | 297 |
|              | Jalpaiguri            | E     | Jalpaiguri         |              |                   |                     |                       | 1                    | 2   | 12                          | 6                               | 106                                       | 0               | 14  | 49                          | 33  | 106       | 0               | 50  | 131 | 76       | 106 | 0   |
|              | Jhargram              | E     | Jhargram           |              |                   |                     |                       | 1                    | 3   | 19                          | 9                               | 105                                       | 0               | 29  | 48                          | 37  | 105       | 0               | 36  | 169 | 79       | 105 | 25  |
|              | Kalimpong             | E     | Kalimpong          |              |                   |                     |                       | 1                    | 2   | 10                          | 6                               | 104                                       | 0               | 13  | 47                          | 31  | 104       | 0               | 42  | 95  | 58       | 104 | 0   |
|              | Kalyani               | E     | Nadia              |              |                   |                     |                       | 1                    | 2   | 20                          | 7                               | 104                                       | 0               | 15  | 49                          | 26  | 104       | 0               | 75  | 534 | 113      | 104 | 62  |
|              | Kharagpur             | E     | Paschim Medinipore |              |                   |                     |                       | 1                    | 5   | 24                          | 13                              | 106                                       | 0               | 31  | 52                          | 41  | 106       | 0               | 46  | 651 | 194      | 106 | 95  |
|              | Kolkata               | E     | Kolkata            |              | MP                | NAC                 | 21                    | 2                    | 37  | 8                           | 211<br>5                        | 0   | 5               | 206                                       | 42                          | 2118                                      | 36        | 14              | 610 | 104 | 211<br>5 | 803 |     |
|              | Krishnanagar          | E     | Nadia              |              |                   |                     |                       | 1                    | 2   | 15                          | 7                               | 104                                       | 0               | 15  | 44                          | 26  | 104       | 0               | 72  | 316 | 107      | 104 | 55  |
|              | Madhyamgram           | E     | North 24 Parganas  |              |                   |                     |                       | 1                    | 2   | 20                          | 8                               | 103                                       | 0               | 11  | 50                          | 27  | 103       | 0               | 57  | 567 | 118      | 103 | 69  |
|              | Malda                 | E     | Malda              |              |                   |                     |                       | 1                    | 2   | 13                          | 7                               | 103                                       | 0               | 14  | 49                          | 34  | 105       | 0               | 54  | 218 | 101      | 105 | 37  |
|              | Medinipur             | E     | Paschim Medinipore | Co           |                   |                     |                       | 1                    | 4   | 18                          | 9                               | 107                                       | 0               | 30  | 47                          | 38  | 107       | 0               | 35  | 181 | 80       | 107 | 20  |
|              | Purulia               | E     | Purulia            |              |                   |                     |                       | 1                    | 2   | 13                          | 2                               | 104                                       | 0               | 14  | 32                          | 20  | 104       | 0               | 55  | 135 | 95       | 104 | 42  |
|              | Raigunj               | E     | Uttar Dinajpur     |              |                   |                     |                       | 1                    | 2   | 28                          | 7                               | 104                                       | 0               | 13  | 48                          | 32  | 104       | 0               | 46  | 160 | 78       | 104 | 16  |
|              | Rampurhat             | E     | Birbhum            |              |                   |                     |                       | 1                    | 2   | 12                          | 2                               | 104                                       | 0               | 15  | 33                          | 20  | 104       | 0               | 58  | 158 | 102      | 104 | 53  |
|              | Ranaghat              | E     | Nadia              |              |                   |                     |                       | 1                    | 2   | 17                          | 7                               | 104                                       | 0               | 15  | 57                          | 26  | 104       | 0               | 65  | 409 | 112      | 104 | 58  |
|              | Raniganj              | E     | Uttar Dinajpur     |              |                   | NAC                 | 3                     | 7                    | 20  | 15                          | 312                             | 0   | 19              | 54  | 44                          | 312                                       | 0         | 78              | 263 | 186 | 312      | 308 |     |
|              | Rishra                | E     | Hooghly            |              |                   |                     |                       | 1                    | 2   | 21                          | 8                               | 104                                       | 0               | 11  | 51                          | 27  | 104       | 0               | 51  | 574 | 118      | 104 | 71  |
|              | Sankrail              | E     | Howrah             |              |                   |                     |                       | 4                    | 2   | 34                          | 10                              | 418                                       | 0               | 29  | 50                          | 38  | 418       | 0               | 31  | 339 | 110      | 418 | 177 |
|              | Siliguri              | E     | Darjeeling         |              |                   |                     |                       | 1                    | 2   | 13                          | 6                               | 105                                       | 0               | 17  | 46                          | 33  | 104       | 0               | 46  | 198 | 80       | 105 | 21  |
|              | Suri                  | E     | Birbhum            |              |                   |                     |                       | 1                    | 2   | 15                          | 2                               | 104                                       | 0               | 15  | 34                          | 20  | 104       | 0               | 62  | 140 | 98       | 104 | 47  |
|              | Tamluk                | E     | Purba Medinipore   | Co           |                   |                     |                       | 1                    | 3   | 23                          | 10                              | 106                                       | 0               | 30  | 59                          | 38  | 106       | 0               | 43  | 431 | 108      | 106 | 37  |
|              | Tribeni               | E     | Hooghly            |              |                   |                     |                       | 1                    | 2   | 16                          | 7                               | 104                                       | 0               | 12  | 43                          | 25  | 104       | 0               | 43  | 506 | 114      | 104 | 62  |
|              | Uluberia              | E     | Howrah             |              |                   |                     |                       | 1                    | 3   | 23                          | 10                              | 104                                       | 0               | 30  | 50                          | 39  | 104       | 0               | 36  | 255 | 94       | 104 | 37  |

NB. Alwar in Rajasthan (Aravali Hills), Agra, Firozabad, Mathura in Uttar Pradesh (Taj-Trapezium), Dehradun in Uttarakhand (Doon valley) are cities in Ecologically sensitive area. The rest fall under Residential / industrial / rural / other areas; NAAQS (annual): SO<sub>2</sub>=50  $\mu\text{g}/\text{m}^3$ , NO<sub>2</sub>=40  $\mu\text{g}/\text{m}^3$ , PM<sub>10</sub>=60  $\mu\text{g}/\text{m}^3$ , PM<sub>2.5</sub>=40  $\mu\text{g}/\text{m}^3$  (Residential / industrial / rural / other areas) and SO<sub>2</sub>=20  $\mu\text{g}/\text{m}^3$ , NO<sub>2</sub>=30  $\mu\text{g}/\text{m}^3$ , PM<sub>10</sub>=60  $\mu\text{g}/\text{m}^3$ , PM<sub>2.5</sub>=40  $\mu\text{g}/\text{m}^3$  (Ecologically sensitive area)

NAAQS (24-hourly): SO<sub>2</sub>=80  $\mu\text{g}/\text{m}^3$ , NO<sub>2</sub>=80  $\mu\text{g}/\text{m}^3$ , PM<sub>10</sub>=100  $\mu\text{g}/\text{m}^3$ , PM<sub>2.5</sub>=60  $\mu\text{g}/\text{m}^3$  (Residential / industrial / rural / other areas and Ecologically sensitive area)

RIRuO-Residential / industrial / rural / other areas, ESA- Ecologically sensitive area, N-North, E-East, W-West, S-South, NE-North East, C-Central, Co-Coastal cities, I-industrial, MP-milllion plus cities, NAC- Non attainment cities on the basis of 2014- 18 data. SO<sub>2</sub>-Sulphur Dioxide, NO<sub>2</sub>-Nitrogen Dioxide, PM<sub>10</sub>-Particulate matter of aerodynamic size  $\leq 10$  micrometer in diameter, Min-Minimum 24-hourly average concentration in the year, Max-Maximum 24-hourly average concentration in the year. Names within parentheses are the tehsils of the rural areas.

**Table 2.8: Ambient air quality in cities with respect to PM<sub>2.5</sub> during 2019**

| State                          | City / town / village          | Zones | District                            | Coastal city | Industrial (CEPI) | Million plus | NAC | No. of AAQM stations | PM <sub>2.5</sub>                  |                             |                                 |     |     |
|--------------------------------|--------------------------------|-------|-------------------------------------|--------------|-------------------|--------------|-----|----------------------|------------------------------------|-----------------------------|---------------------------------|-----|-----|
|                                |                                |       |                                     |              |                   |              |     |                      | Concentration in µg/m <sup>3</sup> |                             | No. of observations in the year |     |     |
|                                |                                |       |                                     |              |                   |              |     |                      | Minimum (24-hourly average)        | Maximum (24-hourly average) |                                 |     |     |
| Andhra Pradesh                 | Anantapur                      | S     | Anantapur                           |              |                   |              | NAC | 4                    | 10                                 | 65                          | 30                              | 206 | 1   |
|                                | Chittoor                       | S     | Chittoor                            |              |                   |              | NAC | 3                    | 7                                  | 66                          | 26                              | 238 | 1   |
|                                | Eluru                          | S     | West Godavari                       |              |                   |              | NAC | 2                    | 12                                 | 33                          | 19                              | 84  | 0   |
|                                | Guntur                         | S     | Guntur                              |              |                   |              | NAC | 4                    | 11                                 | 48                          | 23                              | 250 | 0   |
|                                | Kadapa                         | S     | YS Rajshekhar Reddy/Kadapa/Cuddapah |              |                   |              | NAC | 3                    | 8                                  | 69                          | 26                              | 205 | 1   |
|                                | Kakinada                       | S     | East Godavari                       | Co           |                   |              |     | 4                    | 6                                  | 107                         | 20                              | 165 | 6   |
|                                | Kurnool                        | S     | Kurnool                             |              |                   |              | NAC | 4                    | 9                                  | 58                          | 30                              | 230 | 0   |
|                                | Nellore                        | S     | Sri Potti Sriramulu Nellore         | Co           |                   |              | NAC | 2                    | 26                                 | 38                          | 32                              | 113 | 0   |
|                                | Ongole                         | S     | Prakasam                            | Co           |                   |              | NAC | 3                    | 8                                  | 40                          | 24                              | 81  | 0   |
|                                | Rajahmundry                    | S     | East Godavari                       | Co           |                   |              | NAC | 1                    | 8                                  | 118                         | 34                              | 70  | 11  |
|                                | Srikakulam                     | S     | Srikakulam                          | Co           |                   |              | NAC | 1                    | 10                                 | 95                          | 36                              | 64  | 2   |
|                                | Tirupati                       | S     | Chittoor                            | Co           |                   |              |     | 3                    | 9                                  | 46                          | 27                              | 100 | 0   |
|                                | Vijaywada                      | S     | Krishna                             |              | IA                | MP           | NAC | 3                    | 15                                 | 43                          | 27                              | 261 | 0   |
|                                | Vishakhapatnam                 | S     | Visakhapatnam                       | Co           | CPA               | MP           | NAC | 9                    | 7                                  | 127                         | 33                              | 568 | 40  |
|                                | Vizianagaram                   | S     | Vizianagaram                        | Co           |                   |              | NAC | 1                    | 8                                  | 58                          | 35                              | 50  | 0   |
| Assam                          | Guwahati                       | NE    | Kamrup Metropolitan                 |              |                   |              | NAC | 3                    | 10                                 | 51                          | 27                              | 70  | 0   |
| Bihar                          | Begusarai                      | E     | Begusarai                           |              |                   |              |     | 1                    | 19                                 | 114                         | 55                              | 104 | 36  |
|                                | Muzaffarpur                    | E     | Muzaffarpur                         |              |                   |              | NAC | 1                    | 19                                 | 304                         | 101                             | 104 | 65  |
| Chandi gah                     | Chandigarh                     | N     | Chandigarh                          |              |                   | MP           | NAC | 5                    | 7                                  | 323                         | 63                              | 582 | 244 |
| Chhattisgarh                   | Bilaspur                       | C     | Bilaspur                            |              |                   |              |     | 1                    | 13                                 | 38                          | 27                              | 91  | 0   |
|                                | Durg-Bhillainagar              | C     | Durg                                |              | IA                | MP           | NAC | 4                    | 20                                 | 61                          | 42                              | 290 | 2   |
|                                | Korba                          | C     | Korba                               |              | CPA               |              | NAC | 3                    | 12                                 | 49                          | 30                              | 296 | 0   |
|                                | Raigarh                        | C     | Raigarh                             |              |                   |              |     | 3                    | 8                                  | 40                          | 24                              | 214 | 0   |
| Dadra & Nagar Haveli and Daman | Baldevi (Dadra & Nagar Haveli) | W     | Dadara & Nagar Haveli               | Co           |                   |              |     | 1                    | 10                                 | 43                          | 25                              | 97  | 0   |
|                                | Daman                          | W     | Dadara & Nagar Haveli               | Co           |                   |              |     | 2                    | 11                                 | 59                          | 36                              | 196 | 0   |
|                                | Patlara (Daman)                | W     | Daman                               | Co           |                   |              |     | 1                    | 10                                 | 39                          | 23                              | 100 | 0   |
|                                | Silvassa                       | W     | Daman                               | Co           |                   |              |     | 2                    | 17                                 | 60                          | 39                              | 199 | 0   |
| Delhi                          | Delhi                          | N     | Delhi                               |              | CPA               | MP           | NAC | 4                    | 11                                 | 590                         | 141                             | 329 | 209 |
| Goa                            | Amona                          | W     | North Goa                           | Co           |                   |              |     | 1                    | 16                                 | 120                         | 38                              | 105 | 18  |
|                                | Assanora                       | W     | North Goa                           | Co           |                   |              |     | 1                    | 13                                 | 61                          | 30                              | 104 | 1   |
|                                | Bicholim                       | W     | North Goa                           | Co           |                   |              |     | 1                    | 12                                 | 63                          | 31                              | 103 | 3   |

| State            | City / town / village | Zones | District         | Coastal city | Industrial (CEP) | Million plus | NAC | No. of AAQM stations | PM <sub>2.5</sub>                  |                             |                                 |           |     |
|------------------|-----------------------|-------|------------------|--------------|------------------|--------------|-----|----------------------|------------------------------------|-----------------------------|---------------------------------|-----------|-----|
|                  |                       |       |                  |              |                  |              |     |                      | Concentration in µg/m <sup>3</sup> |                             | No. of observations in the year |           |     |
|                  |                       |       |                  |              |                  |              |     |                      | Minimum (24-hourly average)        | Maximum (24-hourly average) | Annual Average                  | Monitored |     |
| Goa              | Codli                 | W     | North Goa        | Co           |                  |              |     | 1                    | 14                                 | 81                          | 32                              | 103       | 7   |
|                  | Cuncolim              | W     | South Goa        | Co           |                  |              |     | 1                    | 15                                 | 77                          | 38                              | 102       | 13  |
|                  | Honda                 | W     | North Goa        | Co           |                  |              |     | 1                    | 15                                 | 69                          | 32                              | 104       | 7   |
|                  | Kundaim               | W     | North Goa        | Co           |                  |              |     | 1                    | 12                                 | 83                          | 31                              | 104       | 8   |
|                  | Margao                | W     | South Goa        | Co           |                  |              |     | 1                    | 15                                 | 78                          | 30                              | 102       | 7   |
|                  | Panaji                | W     | North Goa        | Co           |                  |              |     | 1                    | 4                                  | 166                         | 50                              | 60        | 15  |
|                  | Ponda                 | W     | North Goa        | Co           |                  |              |     | 1                    | 16                                 | 85                          | 33                              | 105       | 9   |
|                  | Sanguem               | W     | South Goa        | Co           |                  |              |     | 1                    | 15                                 | 68                          | 29                              | 103       | 3   |
|                  | Tilamol               | W     | South Goa        | Co           |                  |              |     | 1                    | 15                                 | 90                          | 35                              | 102       | 9   |
|                  | Tuem                  | W     | North Goa        | Co           |                  |              |     | 1                    | 14                                 | 68                          | 29                              | 104       | 3   |
|                  | Usgao                 | W     | North Goa        | Co           |                  |              |     | 1                    | 17                                 | 99                          | 33                              | 96        | 3   |
|                  | Vasco                 | W     | South Goa        | Co           |                  |              |     | 1                    | 5                                  | 114                         | 41                              | 53        | 8   |
|                  | Ahmedabad             | W     | Ahmedabad        |              | CPA              | MP           | NAC | 9                    | 16                                 | 130                         | 37                              | 783       | 134 |
|                  | Anklesvar             | W     | Bharuch          | Co           | CPA              |              |     | 2                    | 21                                 | 70                          | 36                              | 176       | 11  |
| Gujarat          | Jamnagar              | W     | Jamnagar         | Co           |                  |              |     | 1                    | 14                                 | 85                          | 34                              | 87        | 12  |
|                  | Rajkot                | W     | Rajkot           | Co           |                  | MP           |     | 2                    | 14                                 | 98                          | 35                              | 174       | 21  |
|                  | Surat                 | W     | Surat            | Co           | IA               | MP           | NAC | 3                    | 13                                 | 109                         | 40                              | 258       | 28  |
|                  | Vadodara              | W     | Vadodara         |              | IA               | MP           | NAC | 5                    | 17                                 | 112                         | 37                              | 434       | 49  |
|                  | Vapi                  | W     | Valsad           | Co           | CPA              |              |     | 2                    | 12                                 | 98                          | 40                              | 173       | 28  |
| Himachal Pradesh | Damtal                | N     | Kangra           |              |                  |              | NAC | 2                    | 6                                  | 52                          | 20                              | 196       | 0   |
|                  | Dharamshala           | N     | Kangra           |              |                  |              |     | 2                    | 7                                  | 82                          | 15                              | 147       | 1   |
|                  | Kala Amb              | N     | Sirmaur          |              | IA               |              | NAC | 2                    | 14                                 | 113                         | 69                              | 48        | 29  |
|                  | Manali                | N     | Kullu            |              |                  |              |     | 2                    | 3                                  | 76                          | 22                              | 149       | 3   |
|                  | Paonta Sahib          | N     | Sirmaur          |              |                  |              | NAC | 1                    | 8                                  | 63                          | 39                              | 49        | 2   |
|                  | Parwanoo              | N     | Solan            |              | IA               |              | NAC | 2                    | 6                                  | 56                          | 18                              | 248       | 0   |
|                  | Shimla                | N     | Shimla           |              |                  |              |     | 1                    | 5                                  | 56                          | 26                              | 118       | 0   |
|                  | Sunder Nagar          | N     | Mandi            |              |                  |              | NAC | 2                    | 6                                  | 86                          | 38                              | 71        | 7   |
| Jammu & Kashmir  | Jammu                 | N     | Jammu            |              |                  |              | NAC | 3                    | 12                                 | 63                          | 36                              | 73        | 1   |
|                  | Bagalkote             | S     | Bagalkot         |              |                  |              |     | 1                    | 10                                 | 68                          | 29                              | 40        | 2   |
| Karnataka        | Bangalore             | S     | Bengaluru Urban  |              |                  | MP           | NAC | 8                    | 10                                 | 74                          | 32                              | 467       | 8   |
|                  | Belgaum               | S     | Belagavi         |              |                  |              |     | 1                    | 7                                  | 90                          | 38                              | 50        | 9   |
|                  | Bidar                 | S     | Bidar            |              | IA               |              |     | 1                    | 5                                  | 89                          | 39                              | 51        | 9   |
|                  | Bijapur               | S     | Vijayapura       |              |                  |              |     | 1                    | 15                                 | 76                          | 41                              | 16        | 2   |
|                  | Devanagere            | S     | Davanagere       |              |                  |              | NAC | 1                    | 3                                  | 35                          | 16                              | 85        | 0   |
|                  | Gulburga              | S     | Kalaburagi       |              |                  |              | NAC | 1                    | 23                                 | 102                         | 46                              | 35        | 9   |
|                  | Hassan                | S     | Hassan           |              |                  |              |     | 1                    | 18                                 | 36                          | 25                              | 78        | 0   |
|                  | Hubli-Dharwad         | S     | Dharwad          |              |                  |              | NAC | 2                    | 12                                 | 38                          | 22                              | 209       | 0   |
|                  | Kolar                 | S     | Kolar            |              |                  |              |     | 1                    | 12                                 | 53                          | 28                              | 31        | 0   |
|                  | Mangalore             | S     | Dakshina Kannada | Co           | CPA              |              |     | 1                    | 15                                 | 59                          | 42                              | 14        | 0   |
|                  | Mysore                | S     | Mysuru           |              |                  |              |     | 1                    | 18                                 | 41                          | 26                              | 108       | 0   |
|                  | Raichur               | S     | Raichur          |              | IA               |              |     | 1                    | 3                                  | 34                          | 14                              | 43        | 0   |
|                  | Shimoga               | S     | Shivamogga       |              |                  |              |     | 1                    | 3                                  | 24                          | 12                              | 62        | 0   |

| State          | City / town / village | Zones | District                | Coastal city | Industrial (CEP) | Million plus | NAC | No. of AAQM stations | PM <sub>2.5</sub>                  |                             |                                 |           |    |
|----------------|-----------------------|-------|-------------------------|--------------|------------------|--------------|-----|----------------------|------------------------------------|-----------------------------|---------------------------------|-----------|----|
|                |                       |       |                         |              |                  |              |     |                      | Concentration in µg/m <sup>3</sup> |                             | No. of observations in the year |           |    |
|                |                       |       |                         |              |                  |              |     |                      | Minimum (24-hourly average)        | Maximum (24-hourly average) | Annual Average                  | Monitored |    |
| Kerala         | Kochi                 | S     | Ernakulam               | Co           | CPA              | MP           |     | 1                    | 4                                  | 61                          | 32                              | 43        | 2  |
|                | Kozhikode             | S     | Kozhikode               | Co           |                  | MP           |     | 2                    | 3                                  | 56                          | 14                              | 172       | 0  |
| Madhya Pradesh | Bhopal                | C     | Bhopal                  |              |                  | MP           | NAC | 6                    | 12                                 | 125                         | 69                              | 102       | 51 |
|                | Chhindwara            | C     | Chhindwara              |              |                  |              |     | 2                    | 12                                 | 60                          | 36                              | 184       | 0  |
|                | Dewas                 | C     | Dewas                   |              | IA               |              | NAC | 3                    | 25                                 | 86                          | 46                              | 91        | 61 |
|                | Gwalior               | C     | Gwalior                 |              | IA               | MP           | NAC | 2                    | 13                                 | 175                         | 58                              | 182       | 94 |
|                | Indore                | C     | Indore                  |              | CPA              | MP           | NAC | 3                    | 11                                 | 68                          | 37                              | 294       | 9  |
|                | Katni                 | C     | Katni                   |              |                  |              |     | 2                    | 20                                 | 37                          | 27                              | 3         | 0  |
|                | Nagda                 | C     | Ujjain                  |              | IA               |              |     | 2                    | 25                                 | 48                          | 35                              | 37        | 14 |
|                | Prithampur            | C     | Dhar                    |              | IA               |              |     | 2                    | 17                                 | 65                          | 32                              | 156       | 1  |
|                | Sagar                 | C     | Sagar                   |              |                  |              | NAC | 2                    | 6                                  | 44                          | 19                              | 51        | 0  |
|                | Singrauli             | C     | Singrauli               |              | CPA              |              |     | 3                    | 8                                  | 222                         | 67                              | 112       | 63 |
|                | Ujjain                | C     | Ujjain                  |              |                  |              | NAC | 2                    | 13                                 | 70                          | 31                              | 7         | 2  |
| Maharashtra    | Mumbai                | W     | Mumbai City             | Co           |                  | MP           | NAC | 1                    | 4                                  | 174                         | 40                              | 94        | 17 |
|                | Nagpur                | W     | Nagpur                  |              |                  | MP           | NAC | 1                    | 5                                  | 84                          | 39                              | 78        | 12 |
| Manipur        | Imphal                |       | Imphal West             |              |                  |              |     | 1                    | 37                                 | 71                          | 56                              | 6         | 0  |
|                |                       | NE    |                         |              |                  |              |     |                      |                                    |                             |                                 |           |    |
| Meghalaya      | Bynihat               | NE    | Ri-Bhoi                 |              | IA               |              | NAC | 1                    | 3                                  | 10                          | 7                               | 36        | 0  |
|                | Dawki                 | NE    | West Jaintia Hills      |              |                  |              |     | 1                    | 3                                  | 10                          | 7                               | 36        | 0  |
|                | Khliehriat            | NE    | East Jaintia Hills      |              |                  |              |     | 1                    | 3                                  | 10                          | 7                               | 36        | 0  |
|                | Nongstoin             | NE    | West Khasi Hills        |              |                  |              |     | 1                    | 3                                  | 10                          | 7                               | 36        | 0  |
|                | Shillong              | NE    | East Khasi Hills        |              |                  |              |     | 4                    | 3                                  | 17                          | 8                               | 214       | 0  |
|                | Tura                  | NE    | West Garo Hills         |              |                  |              |     | 1                    | 3                                  | 10                          | 7                               | 36        | 0  |
|                | Umiam / Umsning       | NE    | East Khasi Hills        |              |                  |              |     | 1                    | 3                                  | 10                          | 7                               | 36        | 0  |
| Odisha         | Angul                 | E     | Anugul                  |              | CPA              |              | NAC | 2                    | 15                                 | 87                          | 48                              | 204       | 43 |
|                | Balasore              | E     | Balasore (Baleswar )    | Co           |                  |              | NAC | 3                    | 30                                 | 75                          | 46                              | 312       | 7  |
|                | Berhampur             | E     | Ganjam                  | Co           |                  |              |     | 1                    | 13                                 | 70                          | 26                              | 107       | 1  |
|                | Bhubneshwar           | E     | Khordha                 |              |                  |              | NAC | 6                    | 7                                  | 129                         | 29                              | 348       | 10 |
|                | Bonaigarh             | E     | Sundargarh              |              |                  |              |     | 1                    | 24                                 | 89                          | 51                              | 104       | 0  |
|                | Cuttack               | E     | Cuttack                 |              |                  |              | NAC | 3                    | 18                                 | 113                         | 47                              | 202       | 38 |
|                | Jharsuguda            | E     | Jharsuguda              |              | CPA              |              |     | 2                    | 29                                 | 93                          | 45                              | 214       | 22 |
|                | Paradeep              | E     | Jagatsinghpur           | Co           | IA               |              |     | 1                    | 23                                 | 169                         | 55                              | 76        | 14 |
|                | Puri                  | E     | Puri                    | Co           |                  |              |     | 1                    | 12                                 | 91                          | 21                              | 38        | 1  |
|                | Rajgangpur            | E     | Sundargarh              |              |                  |              |     | 1                    | 31                                 | 93                          | 58                              | 103       | 39 |
|                | Rayagada              | E     | Rayagada                |              |                  |              |     | 2                    | 9                                  | 91                          | 33                              | 205       | 4  |
|                | Rourkela              | E     | Sundargarh (Sundargarh) |              |                  |              | NAC | 4                    | 17                                 | 93                          | 47                              | 416       | 79 |
|                | Sambalpur             | E     | Sambalpur               |              |                  |              |     | 1                    | 19                                 | 164                         | 48                              | 105       | 17 |
|                | Talcher               | E     | Anugul                  |              | CPA              |              | NAC | 2                    | 12                                 | 125                         | 47                              | 208       | 58 |

Chapter 2: Major findings – 2019

| State         | City / town / village | Zones | District            | Coastal city | Industrial (CEP) | Million plus | NAC | No. of AAQM stations | PM <sub>2.5</sub>                         |                             |                                 |           |     |
|---------------|-----------------------|-------|---------------------|--------------|------------------|--------------|-----|----------------------|---|-----------------------------|---------------------------------|-----------|-----|
|               |                       |       |                     |              |                  |              |     |                      | Concentration in $\mu\text{g}/\text{m}^3$ |                             | No. of observations in the year |           |     |
|               |                       |       |                     |              |                  |              |     |                      | Minimum (24-hourly average)               | Maximum (24-hourly average) | Annual Average                  | Monitored |     |
| Tamilnadu     | Chennai               | S     | Chennai             | Co           |                  | MP           |     | 7                    | 10  | 76                          | 36                              | 257       | 1   |
|               | Coimbatore            | S     | Coimbatore          |              |                  | MP           |     | 3                    | 9   | 122                         | 37                              | 81        | 5   |
|               | Cuddalore             | S     | Cuddalore           | Co           | CPA              |              |     | 3                    | 24  | 38                          | 32                              | 112       | 0   |
|               | Madurai               | S     | Madurai             |              |                  | MP           |     | 3                    | 12  | 62                          | 26                              | 46        | 1   |
|               | Mettur                | S     | Salem               |              |                  | IA           |     | 2                    | 15  | 71                          | 37                              | 30        | 2   |
|               | Salem                 | S     | Salem               |              |                  |              |     | 1                    | 13  | 80                          | 40                              | 14        | 2   |
|               | Trichy                | S     | Tiruchirappalli     |              |                  | MP           | NAC | 5                    | 19  | 82                          | 46                              | 167       | 37  |
|               | Tuticorin             | S     | Thoothukudi         | Co           |                  |              | NAC | 3                    | 13  | 44                          | 23                              | 95        | 0   |
| Telangana     | Adilabad              | S     | Adilabad            |              |                  |              |     | 1                    | 40  | 50                          | 45                              | 90        | 0   |
|               | Hyderabad             | S     | Hyderabad           |              |                  | MP           | NAC | 8                    | 4   | 148                         | 40                              | 558       | 103 |
|               | Khammam               | S     | Khammam             |              |                  |              |     | 1                    | 34  | 56                          | 45                              | 24        | 0   |
|               | Nalgonda              | S     | Nalgonda            |              |                  |              | NAC | 1                    | 28  | 47                          | 39                              | 16        | 0   |
|               | Nizamabad             | S     | Nizamabad           |              |                  |              |     | 1                    | 33  | 46                          | 41                              | 45        | 0   |
|               | Patencheru            | S     | Medak               |              | CPA              |              | NAC | 1                    | 21  | 56                          | 41                              | 58        | 0   |
|               | Sangareddy            | S     | Sangareddy          |              |                  |              | NAC | 3                    | 4   | 131                         | 44                              | 207       | 28  |
|               | Warangal              | S     | Warangal (Urban)    |              |                  |              |     | 1                    | 32  | 36                          |                                 | 2         | 0   |
| Tripura       | Agartala              | NE    | West Tripura        |              |                  |              |     | 2                    | 13  | 69                          | 42                              | 166       | 59  |
|               |                       |       |                     |              |                  |              |     |                      |   |                             |                                 |           |     |
| Uttar Pradesh | Agra                  | N     | Agra                |              | CPA              | MP           | NAC | 6                    | 6   | 405                         | 110                             | 530       | 321 |
|               | Baghpat               | N     | Baghpat             |              |                  |              |     | 2                    | 42  | 265                         | 92                              | 194       | 178 |
|               | Bareily               | N     | Bareilly            |              |                  |              | NAC | 2                    | 24  | 32                          | 27                              | 36        | 0   |
|               | Ghaziabad             | N     | Ghaziabad           |              | CPA              | MP           | NAC | 4                    | 3   | 457                         | 102                             | 297       | 219 |
|               | Greater Noida         | N     | Gautam Buddha Nagar |              |                  |              |     | 2                    | 48  | 293                         | 94                              | 192       | 169 |
|               | Hapur                 | N     | Hapur               |              |                  |              |     | 2                    | 16  | 398                         | 111                             | 146       | 95  |
|               | Kanpur                | N     | Kanpur Nagar        |              | CPA              | MP           | NAC | 1                    | 3   | 259                         | 66                              | 88        | 38  |
|               | Muzaffarnagar         | N     | Muzaffarnagar       |              |                  |              |     | 2                    | 11  | 170                         | 87                              | 194       | 133 |
|               | Noida                 | N     | Gautam Buddha Nagar |              | CPA              |              | NAC | 4                    | 12  | 462                         | 105                             | 387       | 317 |
| West Bengal   | Asansol               | E     | Paschim Bardhaman   |              | CPA              | MP           | NAC | 1                    | 46  | 141                         | 81                              | 104       | 98  |
|               | Barrackpore           | E     | North 24 Parganas   |              |                  |              | NAC | 1                    | 47  | 114                         | 66                              | 104       | 60  |
|               | Darjeeling            | E     | Darjeeling          |              |                  |              |     | 1                    | 13  | 43                          | 24                              | 104       | 0   |
|               | Durgapur              | E     | Paschim Bardhaman   |              | IA               |              | NAC | 1                    | 53  | 127                         | 73                              | 103       | 91  |
|               | Haldia                | E     | Purba Medinipore    | Co           | CPA              |              | NAC | 1                    | 10  | 121                         | 35                              | 106       | 17  |
|               | Howrah                | E     | Howrah              |              | CPA              |              | NAC | 2                    | 20  | 177                         | 68                              | 209       | 82  |
|               | Kalyani               | E     | Nadia               |              |                  |              |     | 1                    | 43  | 121                         | 60                              | 104       | 39  |
|               | Kolkata               | E     | Kolkata             |              |                  | MP           | NAC | 4                    | 13  | 181                         | 56                              | 416       | 144 |
|               | Sankrail              | E     | Howrah              |              |                  |              |     | 1                    | 21  | 51                          | 31                              | 10        | 0   |
|               | Siliguri              | E     | Darjeeling          |              |                  |              |     | 1                    | 11  | 68                          | 32                              | 105       | 2   |

Note:

- Alwar in Rajasthan (Aravali Hills), Agra, Firozabad, Mathura in Uttar Pradesh (Taj-Trapezium), Dehradun in Uttarakhand (Doon valley) are cities in Ecologically sensitive area. The rest fall under Residential / industrial / rural / other areas; NAAQS (annual):  $\text{SO}_2=50 \mu\text{g}/\text{m}^3$ ,  $\text{NO}_2=40 \mu\text{g}/\text{m}^3$ ,  $\text{PM}_{10}=60 \mu\text{g}/\text{m}^3$ ,  $\text{PM}_{2.5}=40 \mu\text{g}/\text{m}^3$  (Residential / industrial / rural / other areas) and  $\text{SO}_2=20 \mu\text{g}/\text{m}^3$ ,  $\text{NO}_2=30 \mu\text{g}/\text{m}^3$ ,  $\text{PM}_{10}=60 \mu\text{g}/\text{m}^3$ ,  $\text{PM}_{2.5}=40 \mu\text{g}/\text{m}^3$  (Ecologically sensitive area); NAAQS (24-hourly):  $\text{SO}_2=80 \mu\text{g}/\text{m}^3$ ,  $\text{NO}_2=80 \mu\text{g}/\text{m}^3$ ,  $\text{PM}_{10}=100 \mu\text{g}/\text{m}^3$ ,  $\text{PM}_{2.5}=60 \mu\text{g}/\text{m}^3$  (Residential / industrial / rural / other areas and Ecologically sensitive area)

- RIRuO-Residential / industrial / rural / other areas, ESA- Ecologically sensitive area, N-North, E-East, W-West, S-South, NE-North East, C-Central, Co-Coastal cities, I-industrial, MP-million plus cities, NAC- Non attainment cities on the basis of 2014- 18 data. PM<sub>2.5</sub>-Particulate matter of aerodynamic size  $\leq 2.5$  micrometer in diameter; Names within parentheses are the tehsils of the rural areas.

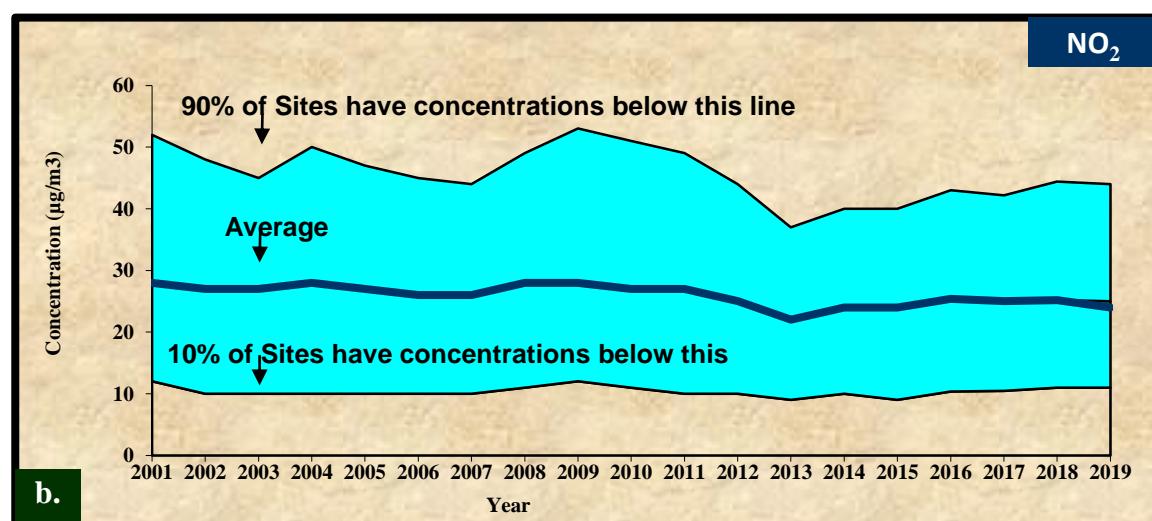
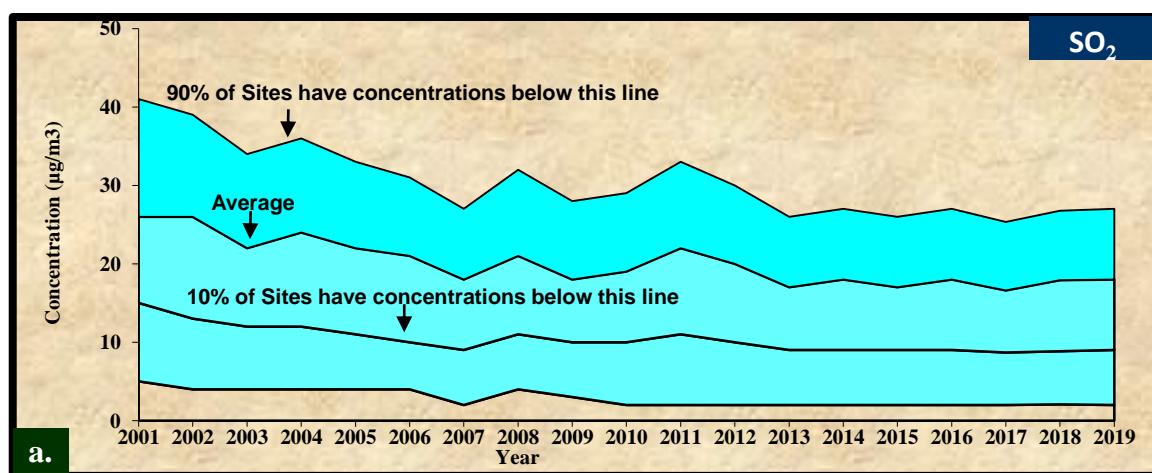
## 2.2 National Average Concentration of regularly monitored pollutants

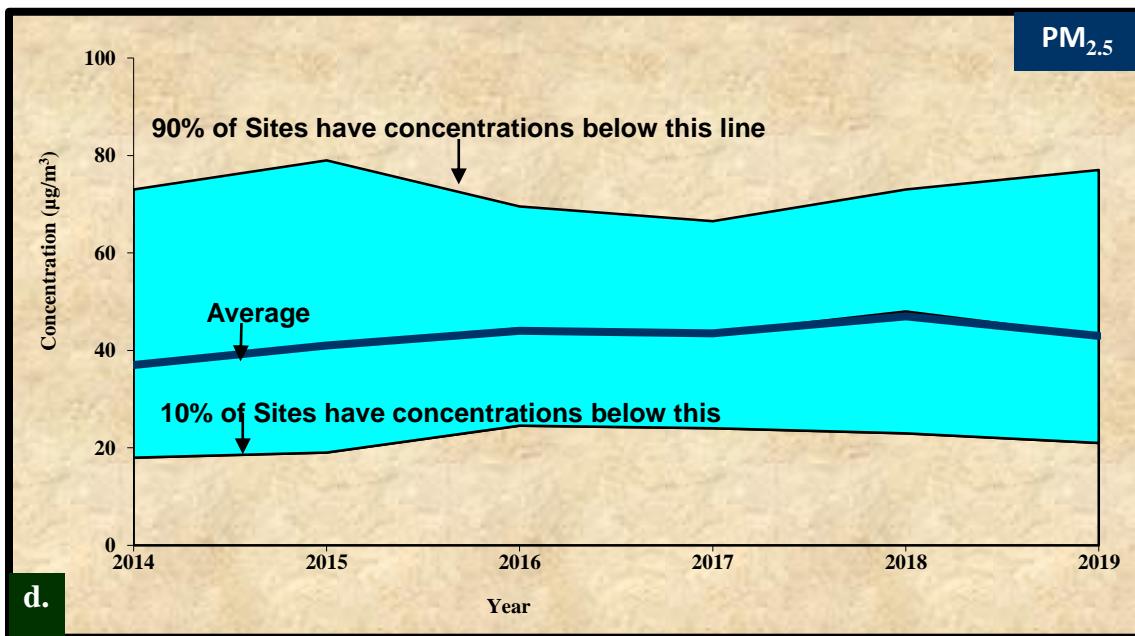
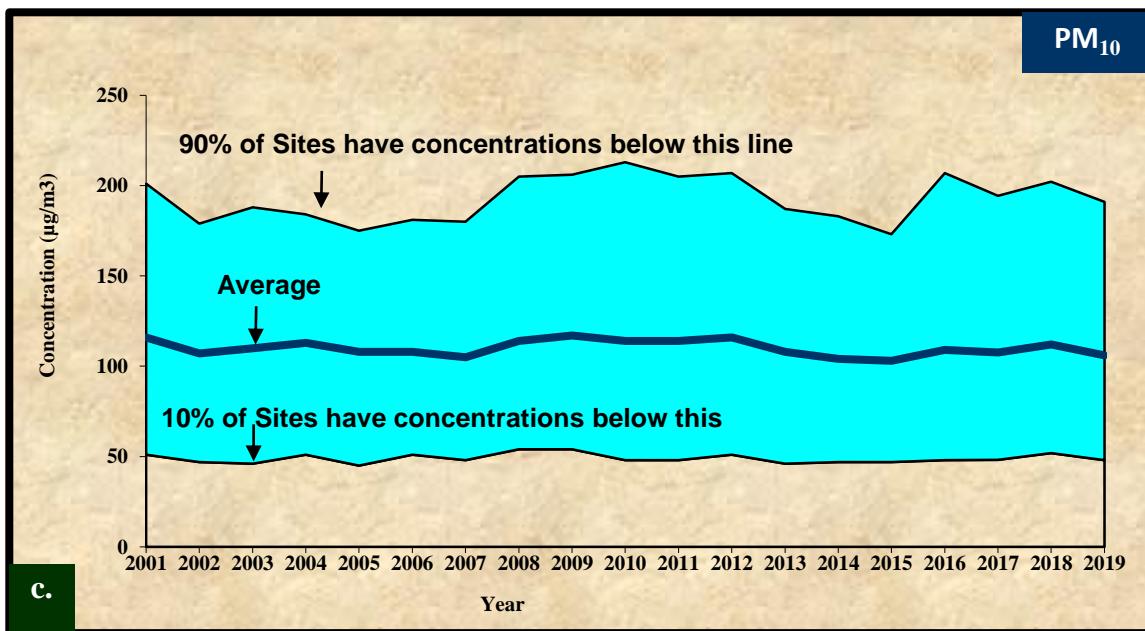
National average concentration with 90<sup>th</sup> percentile and 10<sup>th</sup> percentile for SO<sub>2</sub>, NO<sub>2</sub> and PM<sub>10</sub> is depicted in Figure 2.5. National average of SO<sub>2</sub> concentration has decreased over the years indicating that there has been a decline in SO<sub>2</sub> levels (Figure 2.5a). Decreasing trend may be due to various interventions that have taken place in recent years such as reduction in sulphur in diesel, use of cleaner fuel such as CNG in metro cities, change in domestic fuel from coal to LPG etc. National average of NO<sub>2</sub> concentration has remained stable over the years with a slight decrease in last three years despite increase in sources like vehicles (Figure 2.5b).

National average concentration with 90<sup>th</sup> percentile & 10<sup>th</sup> percentile for SO<sub>2</sub>, NO<sub>2</sub> & PM<sub>10</sub> indicated that SO<sub>2</sub> concentration has decreased over the years; NO<sub>2</sub> concentration remained stable over the years with a slight decrease in last few years despite increase in sources like vehicles. PM<sub>10</sub> concentration revealed a fluctuating trend and a stable trend was observed in PM<sub>2.5</sub>.

The reason for this may be various intervention measures that have taken place such as improvement in vehicle technology and other vehicular pollution control measures like alternate fuel etc. National average of PM<sub>10</sub> concentration shows fluctuating trend exceeding the NAAQS (Figure 2.5c). The reasons being emission from gensets, small scale industries, biomass incineration, suspension of traffic dust, natural dust, commercial and domestic use of fuel and vehicular emission etc. PM<sub>2.5</sub> revealed a stable trend with decline in 2019 (Figure 2.5d).

**Figure 2.5: National mean concentration of different locations that fall under 10<sup>th</sup> and 90<sup>th</sup> Percentile for SO<sub>2</sub>, NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub>**





## 3.0 Sulphur dioxide (SO<sub>2</sub>)

Sulphur dioxide (SO<sub>2</sub>) is a colourless, soluble gas with a characteristic pungent smell. It is the chemical compound produced by volcanoes and in various industrial processes and is a precursor to particulates in the atmosphere. Its natural source is volcanic eruptions (67%) and anthropogenic sources are combustion of fossil fuel (coal, heavy fuel oil in thermal power plants, office, factories), paper Industry, excavation & distribution of fossil fuels, smelting of metals (sulfide ores to produce copper, lead and zinc), petroleum refining, combustion process in diesel, petrol, natural gas driven vehicles. SO<sub>2</sub> in ambient air can also affect human health, particularly in those suffering from asthma and chronic lung diseases and exacerbates respiratory symptoms and impaired breathing in sensitive individuals. It also causes visibility impairment. It is considered more harmful when particulate and other pollution concentrations are high. SO<sub>2</sub> also causes acid rain and aesthetic damage. A compilation of sources and effects of SO<sub>2</sub> are given in [Annexure 1](#).

### Status of SO<sub>2</sub> in 2019

SO<sub>2</sub> is a colourless, soluble gas with a characteristic pungent smell. SO<sub>2</sub> in ambient air can also affect human health, particularly in those suffering from asthma and chronic lung diseases and exacerbates respiratory symptoms and impaired breathing in sensitive individuals.

Air quality of different zones (Central, East, North, NE, South, West) reveals that the central, south & NE zones have lower concentration of SO<sub>2</sub>, as compared to East, North & West zones. Almost all the cities are within the standard.

The coastal cities, industrial & million plus cities are within NAAQS. The non-attainment cities are within the standard except for one city in the Ecologically Sensitive Area.

In this chapter, a detailed comparison of locations and cities with respect to SO<sub>2</sub> levels in the country has been depicted.

### 3.1 Locations and cities exceeding the NAAQS

Table 3.1 shows the number of locations and cities exceeding the NAAQS with respect to SO<sub>2</sub> during 2019. During 2019 in residential / Industrial / Rural area no location exceeded NAAQS of 50 µg/m<sup>3</sup> and 3 locations in ecologically sensitive area exceeded NAAQS of 20 µg/m<sup>3</sup>. Taking cities into consideration, no city exceeded the NAAQS with respect to SO<sub>2</sub> and 1 city in ecologically sensitive area exceeded NAAQS of 20 µg/m<sup>3</sup>.

**Table 3.1. Number of locations and cities exceeding the NAAQS with respect to SO<sub>2</sub>  
(Based on annual average data in µg/m<sup>3</sup>)**

|   | No. of locations                         |                                | Number of cities                         |                                |
|---|--|--------------------------------|--|--------------------------------|
|   | Residential / Industrial /<br>Rural area | Ecologically<br>Sensitive area | Residential / Industrial /<br>Rural area | Ecologically<br>Sensitive area |
|   | NAAQS >50                                | NAAQS >20                      | NAAQS >50                                | NAAQS >20                      |
| Not exceeding NAAQS (NE)                                  | 717                                      | 14                             | 309                                      | 4                              |
| Exceeding NAAQS (E)                                       | 0  | 3                              | 0  | 1                              |
| Inadequate data (ID)                                      | 41                                       | 0                              | 15                                       | 0                              |
| No data (ND)  | 29                                       | 0                              | 15                                       | 0                              |
| Total monitoring stations /<br>cities (NE & E & ID & ND ) | 787                                      | 17                             | 339                                      | 5                              |

#### Locations:

No location exceeded NAAQS for SO<sub>2</sub> in Residential / Industrial / Rural area. The location with highest level of SO<sub>2</sub> (annual average) during 2019 is Himalaya Drug Co. near ISBT, Dehradun, Uttarakhand with 26 µg/m<sup>3</sup> in Ecologically Sensitive area.

**City:**

Ambient air quality data with respect to SO<sub>2</sub> is given in **Annexure 3**. No city exceeded NAAQS for SO<sub>2</sub> in Residential / Industrial / Rural area. One city, Dehradun, Uttarakhand exceeded NAAQS with respect to SO<sub>2</sub> in 2019 in Ecologically Sensitive area with 25 µg/m<sup>3</sup>.

**3.2 SO<sub>2</sub> in cities in different zones of the country**

In this section, an attempt has been made to analyze air quality with respect to different zones and geo-climatic area of the country as given in the Table 3.2:

**Table 3.2 States in different zones of the country**

| <b>Sl. No.</b> | <b>Zone</b> | <b>State</b>      | <b>Union Territory</b>               |
|----------------|-------------|-------------------|--------------------------------------|
| 1.             | Central     | Madhya Pradesh    |                                      |
|                |             | Chhattisgarh      |                                      |
| 2.             | East        | Bihar             | Andaman and Nicobar Islands          |
|                |             | Jharkhand         |                                      |
|                |             | Orissa            |                                      |
|                |             | West Bengal.      |                                      |
| 3.             | North       | Haryana           | Chandigarh                           |
|                |             | Himachal Pradesh  | Delhi                                |
|                |             | Punjab            | Jammu and Kashmir                    |
|                |             | Uttar Pradesh     | Laddakh                              |
|                |             | Uttarakhand       |                                      |
| 4.             | North East  | Arunachal Pradesh |                                      |
|                |             | Assam             |                                      |
|                |             | Manipur           |                                      |
|                |             | Meghalaya         |                                      |
|                |             | Mizoram           |                                      |
|                |             | Nagaland          |                                      |
|                |             | Sikkim            |                                      |
|                |             | Tripura           |                                      |
| 5.             | South       | Andhra Pradesh    | Lakshwadeep                          |
|                |             | Karnataka         | Puducherry                           |
|                |             | Kerala            |                                      |
|                |             | Tamilnadu         |                                      |
|                |             | Telangana         |                                      |
| 6.             | West        | Goa               | Dadra & Nagar Haveli and Daman & Diu |
|                |             | Gujarat           |                                      |
|                |             | Maharashtra       |                                      |
|                |             | Rajasthan         |                                      |

The Central Zone comprises of Madhya Pradesh and Chhattisgarh. Being a plateau region, it is rich in minerals and is also home to many famous wildlife sanctuaries, national parks and bio-reserve. This area experience moderate temperatures during both summer and winter months. The monsoons fall between July and September which brings heavy downpour.

The East Zone is comprised of states of Andaman and Nicobar Islands, Bihar, Jharkhand, Orissa, and West Bengal. The bulk of the region lies on the east coast of India by the Bay of Bengal, and on the Indo-Gangetic plain. Jharkhand, on the Chhota Nagpur plateau, is a hilly and a heavily forested state rich in mineral wealth. Odisha is also a mineral rich state of India. The region lies in the humid-subtropical zone, and experiences hot summers from March to June, the monsoon from July to October and mild winters from November to February. The interior states have a drier climate and slightly more extreme climate, especially during the winters and summers, but the whole region receives heavy, sustained rainfall during the monsoon months. Snowfall occurs in the extreme northern regions of West Bengal.

North zone comprises of Chandigarh, Delhi, Haryana, Himachal Pradesh, Jammu and Kashmir, Ladakh, Punjab, Uttar Pradesh and Uttarakhand. The predominant geographical features of North India are the Indo-Gangetic plain, the Himalayas and the Thar Desert. North India lies mainly in the North Temperate

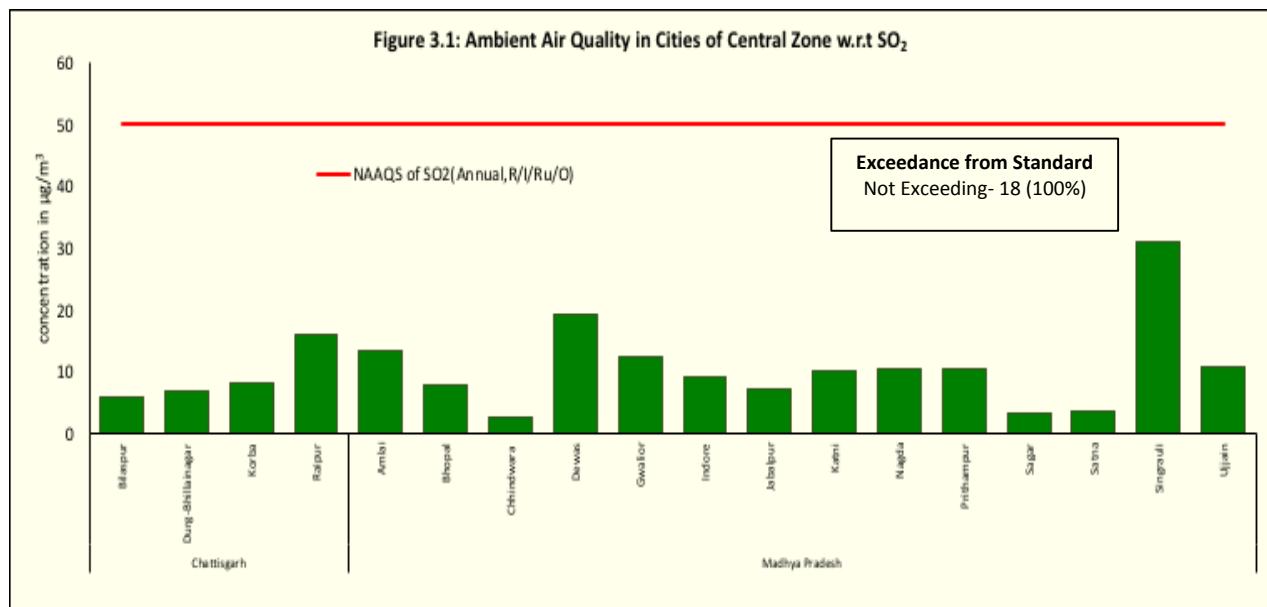
Zone with though cool or cold winters, hot summers and moderate monsoons. Heavy to moderate snowfall occurs in Himachal Pradesh, J&K and Uttarakhand and much of North India is notorious for heavy fog during winters. The region receives rain and snow precipitation through two primary weather patterns, the Indian Monsoon and the Western Disturbances.

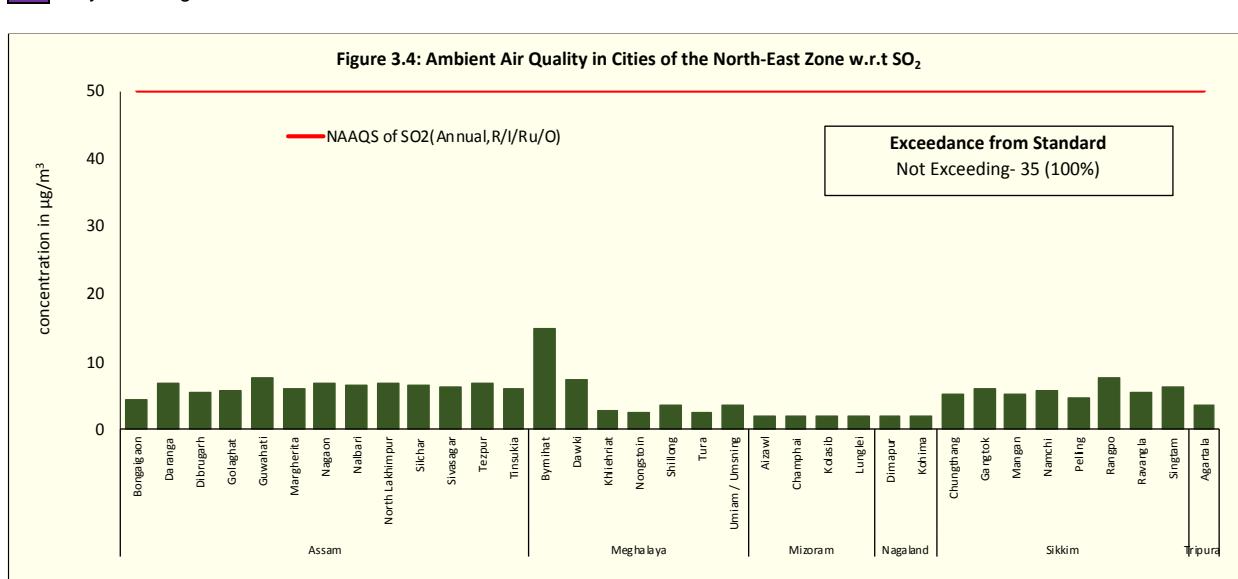
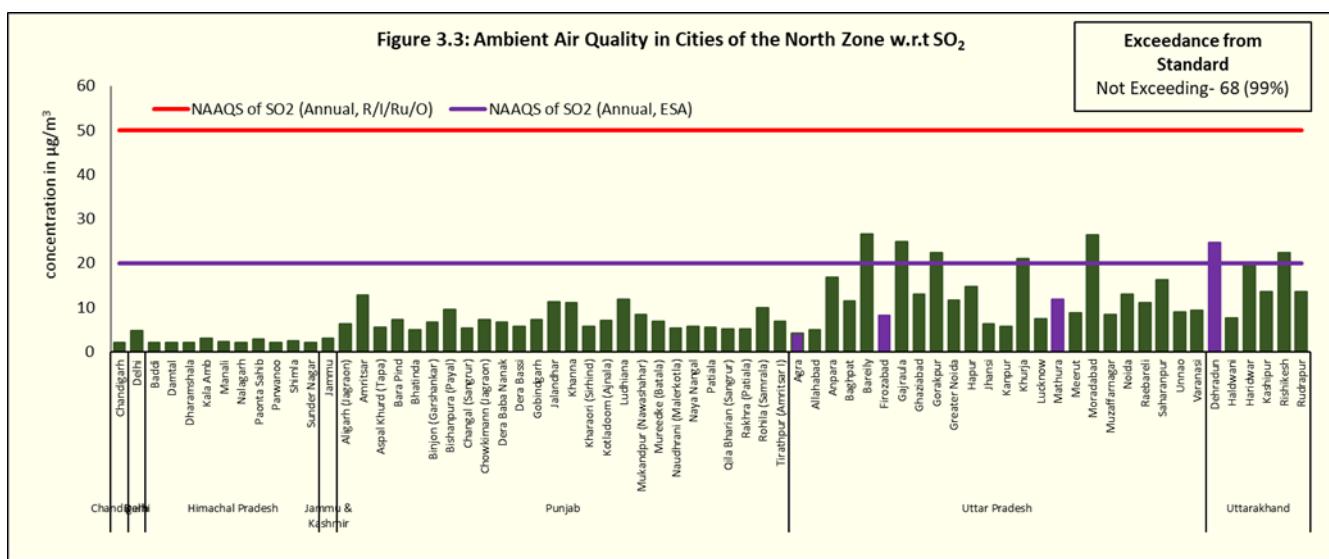
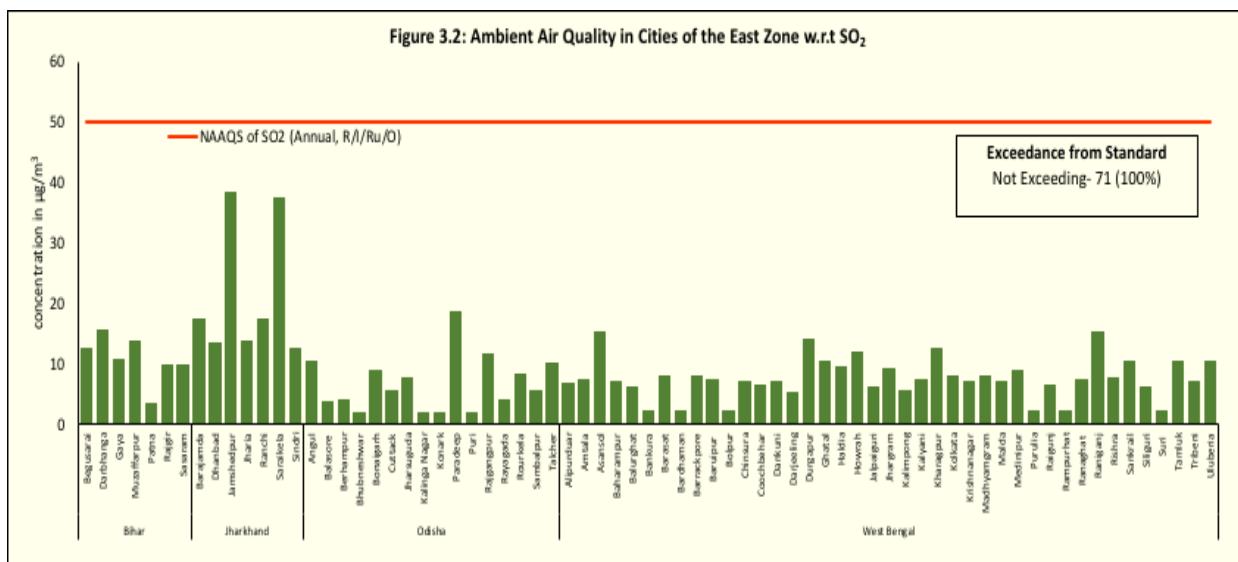
North East Zone houses the states of Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura. The region shares more than 4,500 kilometres of international border with Tibet in the north, Myanmar in the east, Bangladesh in the southwest and Bhutan to the northwest. The Northeast region can be physiographically categorised into the Eastern Himalaya, the Patkai and the Brahmaputra and the Barak valley plains. It has a predominantly humid sub-tropical climate with hot, humid summers, severe monsoons, and mild winters. Along with the west coast of India, this region has some of the Indian sub-continent's last remaining rain forests.

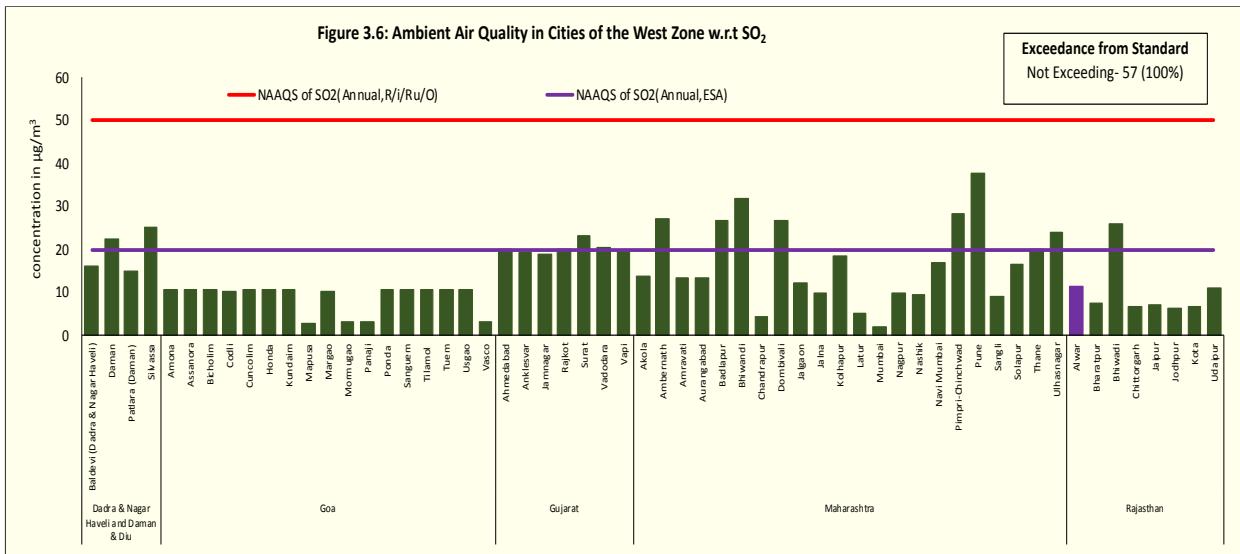
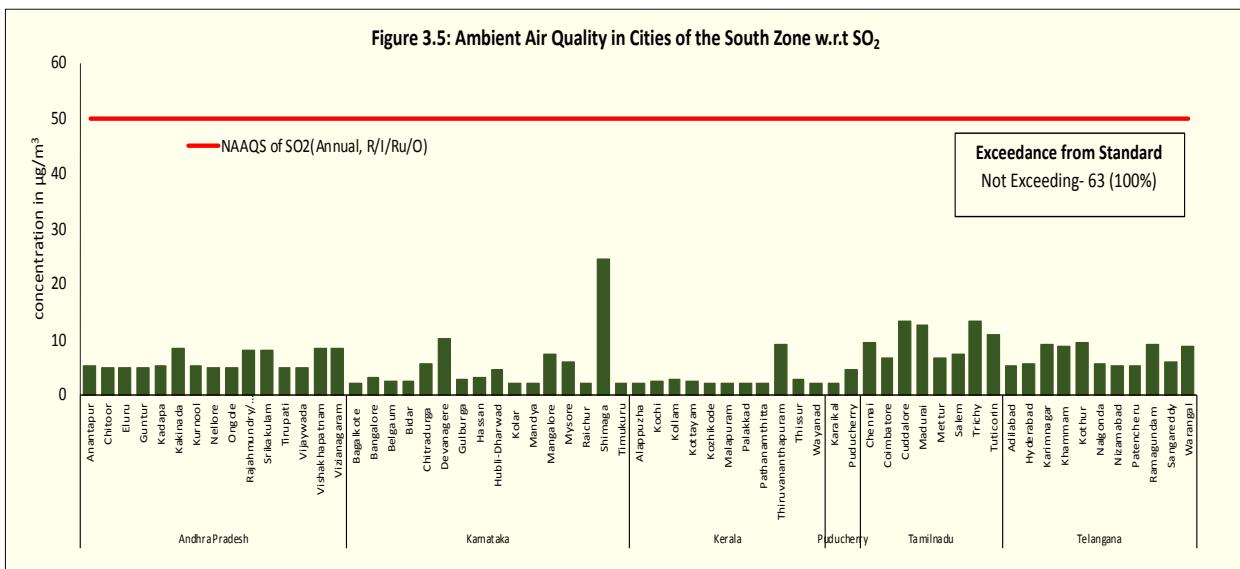
South Zone contains Andhra Pradesh, Karnataka, Kerala, Lakshwadeep, Puducherry, Tamilnadu and Telangana occupy the South Zone on India. South India is a peninsula in the shape of an inverted triangle bound by the Arabian Sea on the west, by the Bay of Bengal on the east and Vindhya and Satpura ranges on the north. The Western Ghats run parallel along the western coast. The region has a tropical climate and depends on monsoons for rainfall.

West Zone houses the states and UTs of Dadra & Nagar Haveli and Daman & Diu, Goa, Gujarat Maharashtra and Rajasthan. Goa and many places in Maharashtra are located in the western coasts. The region consists of the predominantly arid to semi-arid region of Saurashtra and Kutch in the North. The climate varies between tropical wet, tropical wet and dry, and semi arid. The vegetation varies from tropical rainforests along the Konkan coast to thorny bushes and shrubs in northern Gujarat. The rivers of this region are Mahi, Narmada, Tapi, Godavari, Zuari, Mandovi, Krishna, Ghaggar, Chambal and many other smaller tributaries of other rivers.

The graphs below compares the ambient air quality with respect to SO<sub>2</sub> in different zones of the county. SO<sub>2</sub> in all the cities of the zones are within the National Standard except for Dehradun. It can be seen that the central, south and north-east zones have lower concentration compared to east, north and west zones (Figure 3.1 to Figure 3.6).





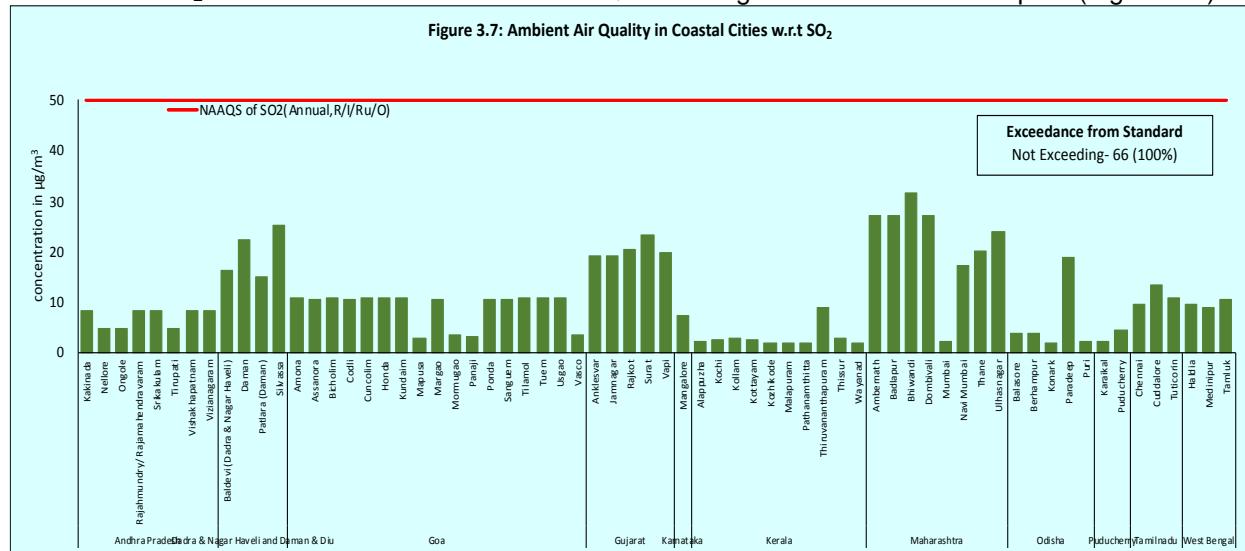


City in ecological sensitive area

### 3.3 SO<sub>2</sub> in the coastal cities of the country

The definitions of 'near-coastal zone' is "contiguous area along the coast that is less than 10 meters above sea level" (*McGranahan et. al. 2007*) and 'within 100 km of a shoreline and 100 m of sea level' (*Small & Nicholls, 2003*).

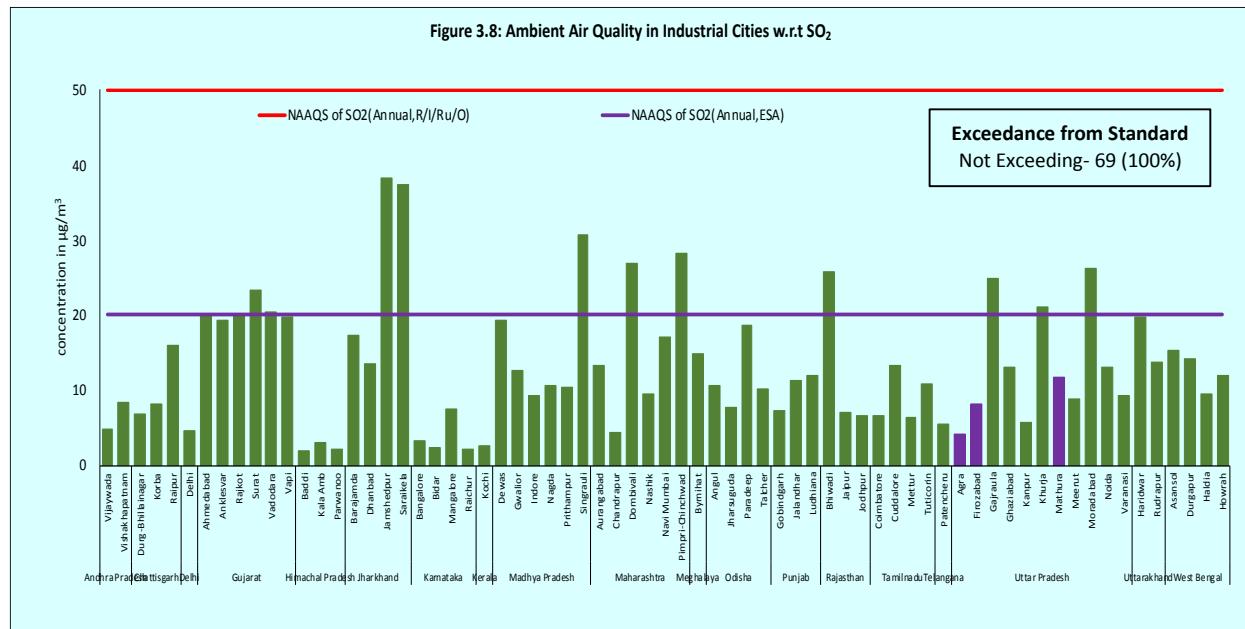
The level of SO<sub>2</sub> in the coastal cities is within NAAQS including the coastal cities with ports(Figure 3.7).



### 3.4 SO<sub>2</sub> in the industrial cities of the country

The industrial cities in this report have been selected on the basis of the 100 industrial areas or clusters selected by CPCB & MoEF&CC for application of Comprehensive Environmental Pollution Index (CEPI) in respect of Air Pollution.

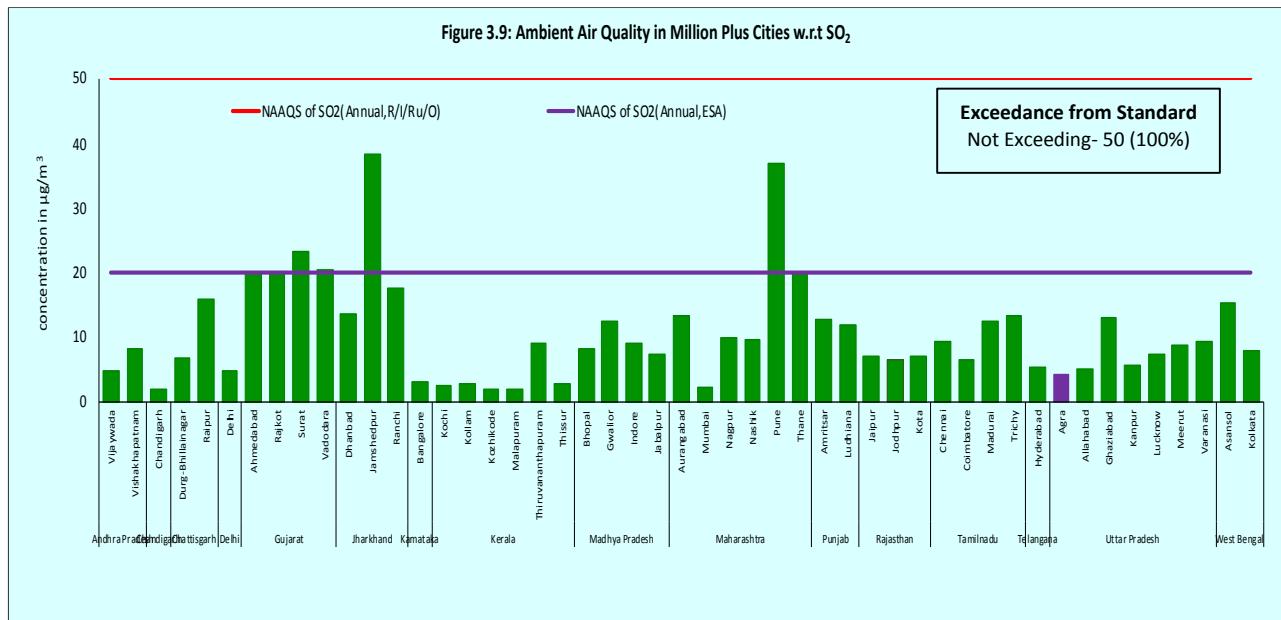
The SO<sub>2</sub> levels are within NAAQS in the industrial cities [cities identified by CPCB as industrial clusters and comprehensive environmental pollution index (CEPI) calculated accordingly] were within NAAQS in both for residential / industrial and other areas (Figure 3.8).



### **3.5 SO<sub>2</sub> in the million plus cities (population > 10 lakhs) of the country**

According to Census of India 2011, 53 million plus cities (population  $\geq$  10 lakh or 1 million) have been recorded.

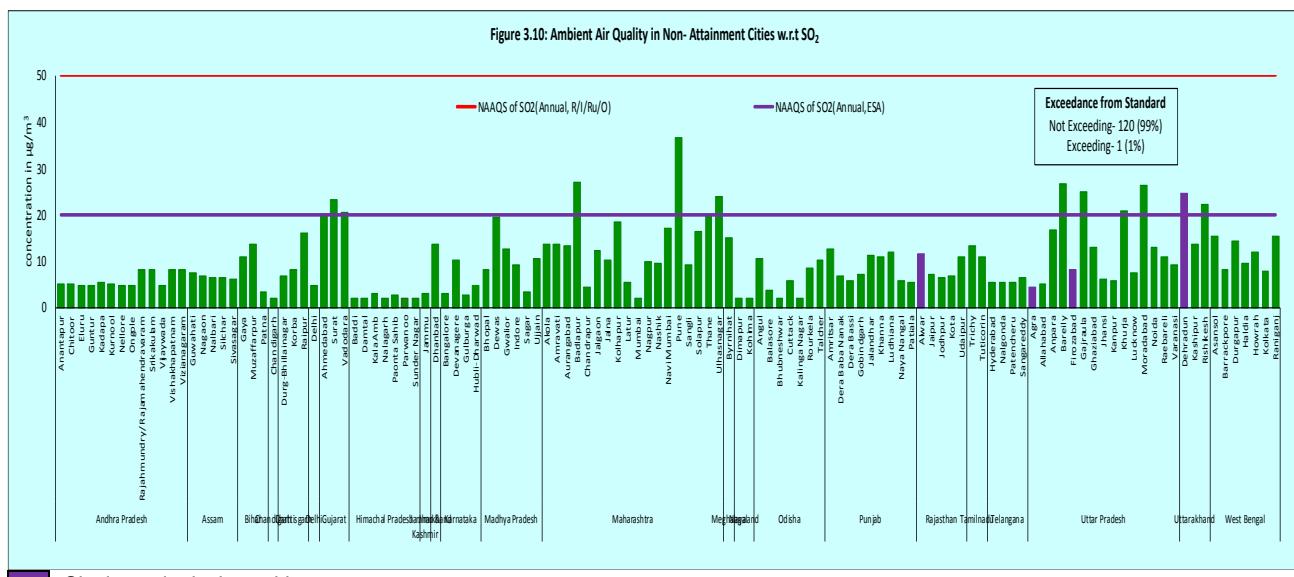
The level of SO<sub>2</sub> in the million plus cities is within NAAQS both for residential / industrial and other areas and ecologically sensitive area (Figure 3.9).



## City in ecological sensitive area

### **3.6 SO<sub>2</sub> in the Non- attainment cities of the country**

On the basis of 2014 - 2018 ambient air quality data, 122 non- attainment cities (cities exceeding the national standard for consecutive five years) have been identified. The level of SO<sub>2</sub> in the non- attainment cities is within NAAQS for residential / industrial and other areas except for one city in ecologically area (Figure 3.10).



City in ecological sensitive area

## 4.0 Nitrogen dioxide (NO<sub>2</sub>)

Oxides of nitrogen are a generic term for a group of highly reactive gases that contain nitrogen and oxygen in varying amounts. Oxides of nitrogen are formed during combustion processes at high temperatures from the oxidation of nitrogen in air. NO<sub>x</sub> are emitted as nitrogen oxide (NO) which is rapidly oxidized to nitrogen dioxide (NO<sub>2</sub>). Nitrogen dioxide (NO<sub>2</sub>) is a reddish-brown toxic gas with a characteristic sharp, biting odor and is a prominent air pollutant. Sources of nitrogen oxides includes lightning, forest fires, bacterial activity of soil as natural source and vehicles, industrial processes that burn, high temperature combustion (internal combustion engines, fossil fuel-fired power stations, industrial, burning of bio-mass and fossil fuels are anthropogenic sources. NO<sub>2</sub> irritates the nose and throat increase susceptibility to respiratory infections. In addition, NO<sub>x</sub> is a potent and selective vasodilator in pulmonary arterial hypertension. Oxides of nitrogen react with Volatile Organic Compounds (VOCs) to form ground level ozone. They also react to form nitrates, acid aerosols. Almost all NO<sub>x</sub> is emitted as NO, which is rapidly oxidized to non toxic NO<sub>2</sub>.

### Status of NO<sub>2</sub> in 2019

Nitrogen dioxide (NO<sub>2</sub>) is a reddish-brown toxic gas and is a prominent air pollutant. NO<sub>2</sub> irritates the nose and throat increase susceptibility to respiratory infections. It is a potent and selective vasodilator in pulmonary arterial hypertension.

Air quality of different zones reveals that the north-east is within the NAAQS. Both central and north-east zones and have lower concentration than south, east, north and west zones.

The coastal cities are almost within NAAQS except for 6 of the cities of Maharashtra. Among the 69 industrial cities under NAMP, 13 cities exceed the NAAQS. 8 cities among the million plus cities exceed the national standard and among the 122 non-attainment cities, 15 cities exceed the standard.

In this chapter, a detailed comparison of locations and cities with respect to NO<sub>2</sub> levels in the country has been depicted.

### 4.1 Locations and cities exceeding the NAAQS

Table 4.1 shows the number of locations and cities exceeding the NAAQS with respect to NO<sub>2</sub> during 2019. During 2019 in residential / Industrial / Rural area 91 locations exceed NAAQS of 40 µg/m<sup>3</sup> and 5 locations exceed NAAQS of 30 µg/m<sup>3</sup>. Taking cities into consideration, in residential / Industrial / Rural area 28 cities exceed NAAQS of 40 µg/m<sup>3</sup> and 2 cities exceeded the NAAQS of 30 µg/m<sup>3</sup> in Ecologically Sensitive area.

**Table 4.1. Number of locations and cities exceeding the NAAQS with respect to NO<sub>2</sub>**  
(Based on annual average data in µg/m<sup>3</sup>)

|  | No. of locations                      |                             | Number of cities                      |                             |
|--|---------------------------------------|-----------------------------|---------------------------------------|-----------------------------|
|  | Residential / Industrial / Rural area | Ecologically Sensitive area | Residential / Industrial / Rural area | Ecologically Sensitive area |
|  | NAAQS >40                             | NAAQS >30                   | NAAQS >40                             | NAAQS >30                   |
| Not exceeding NAAQS (NE)                               | 627                                   | 12                          | 282                                   | 3                           |
| Exceeding NAAQS (E)                                    | 91                                    | 5                           | 28                                    | 2                           |
| Inadequate data (ID)                                   | 32                                    | 0                           | 14                                    | 0                           |
| No data (ND)   | 37                                    | 0                           | 15                                    | 0                           |
| Total monitoring stations / cities (NE & E & ID & ND ) | 787                                   | 17                          | 339                                   | 5                           |

#### Locations:

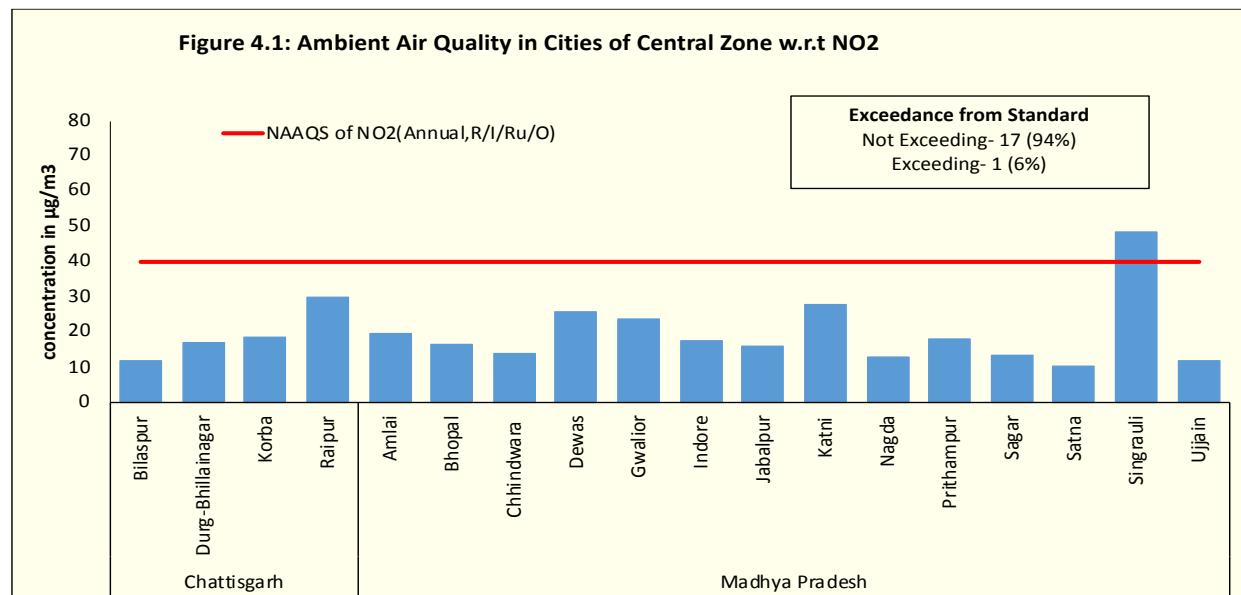
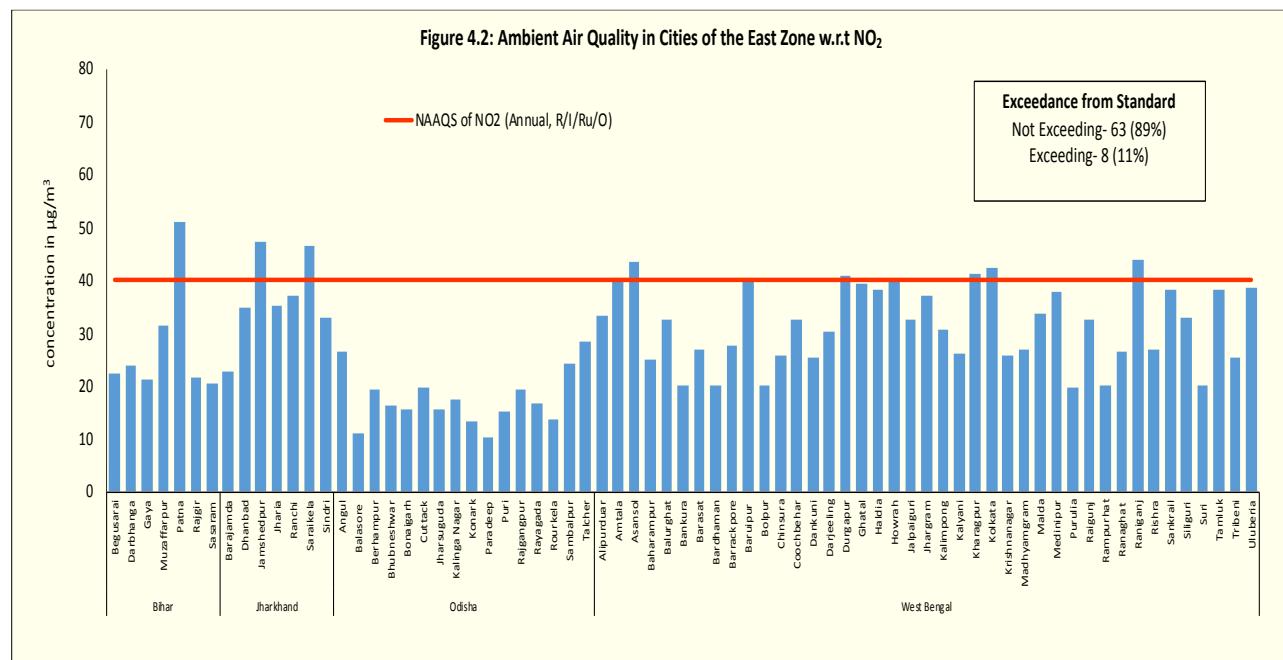
The location with highest level of NO<sub>2</sub> (annual average) during 2019 is Town Hall, Ayurvedic Dispensary, Chandni Chowk, Delhi with 117 µg/m<sup>3</sup> in Residential / Industrial / Rural area and Gaurav Solvex Ltd. MIA, Alwar, Rajasthan with 37 µg/m<sup>3</sup> in Ecologically Sensitive area

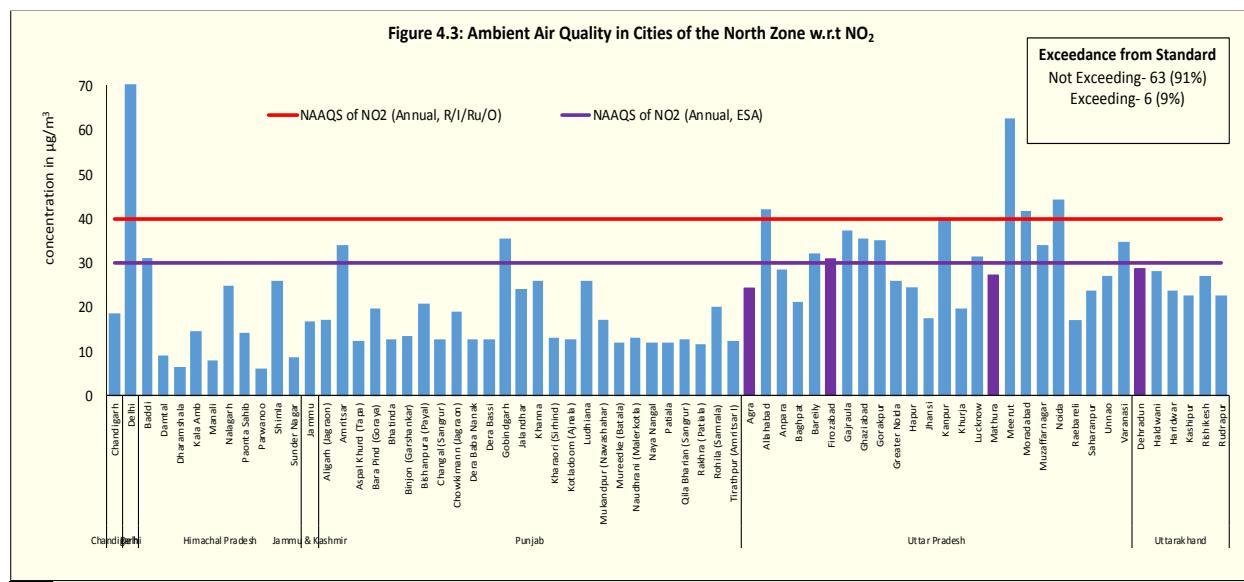
**City:**

Ambient air quality data with respect to NO<sub>2</sub> is given in **Annexure 4**. The city (Residential / Industrial / Rural area) with highest level of NO<sub>2</sub> (annual average) during 2019 is Pune, Maharashtra with 87 µg/m<sup>3</sup> and Alwar, Rajasthan (Ecologically Sensitive area) with 34 µg/m<sup>3</sup>.

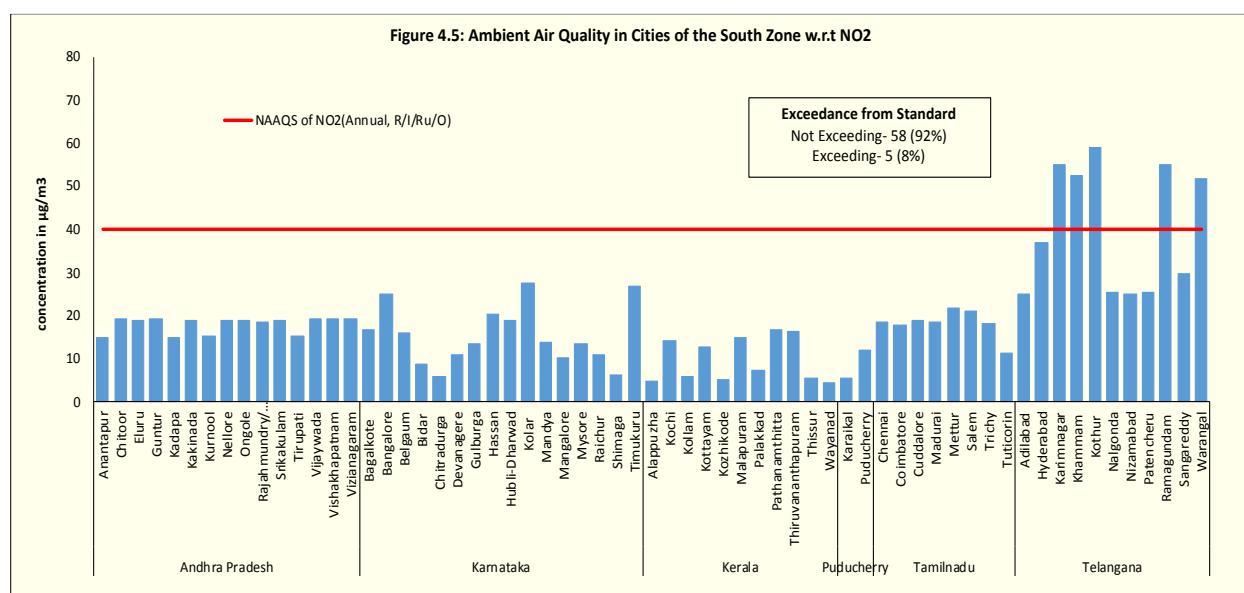
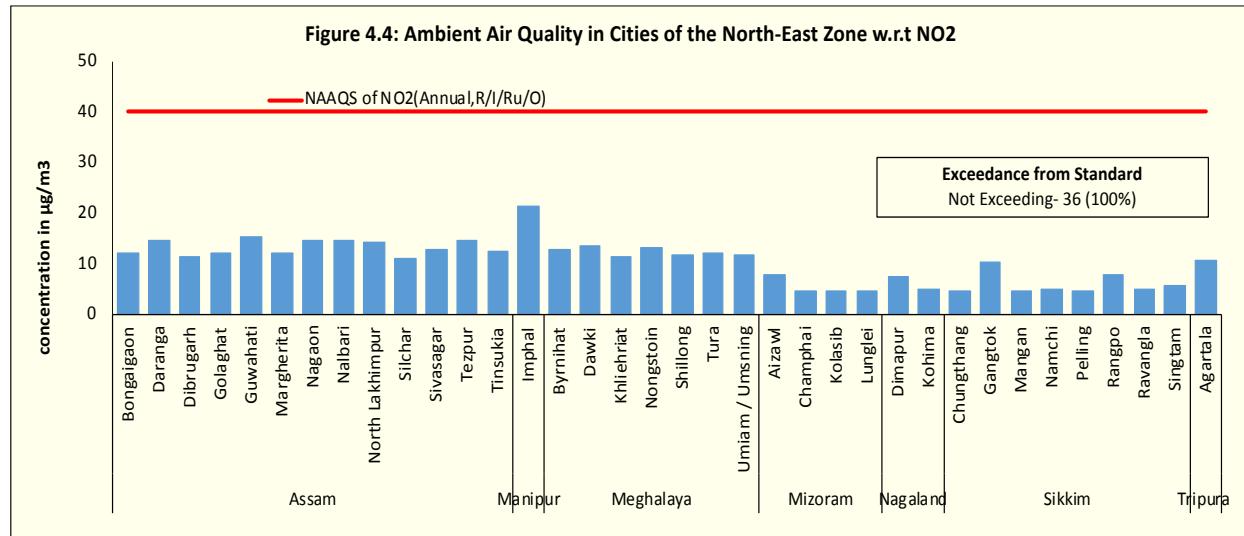
**4.2 NO<sub>2</sub> in different zones of the country**

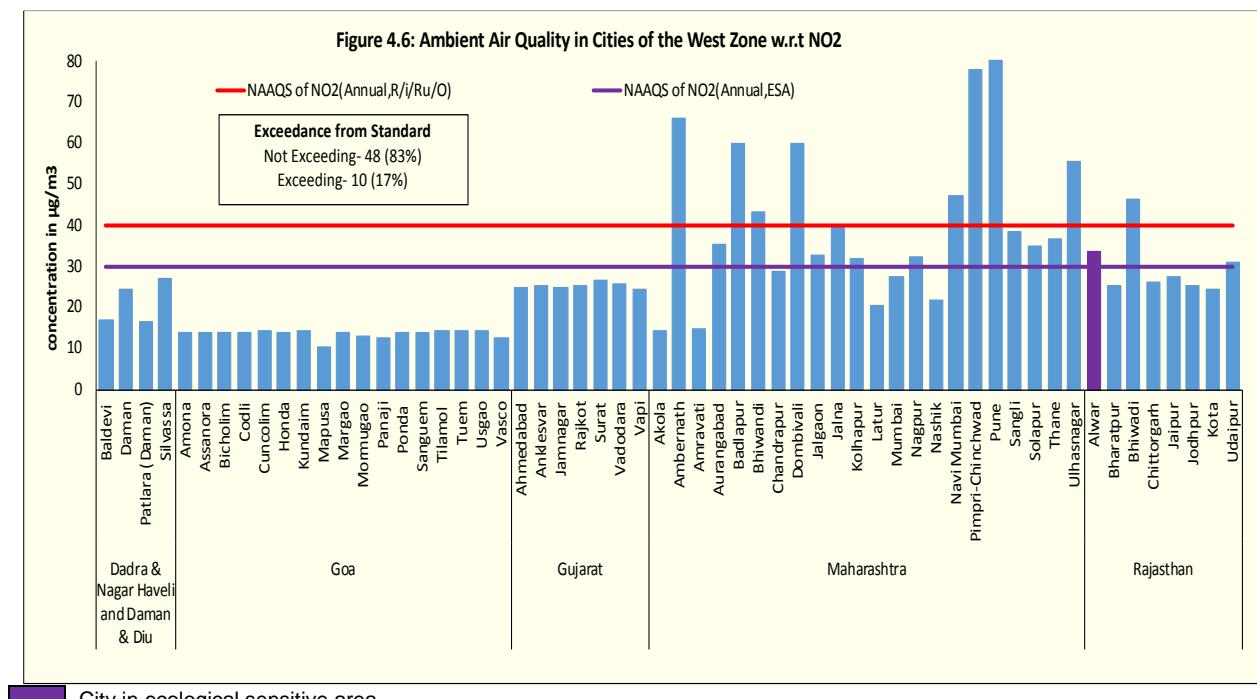
The graphs below compare the ambient air quality with respect to NO<sub>2</sub> in different zones of the county. It can be seen that the north-east is within the NAAQS. Both central and north-east zones have lower concentration than south, east, north and west zones (Figure 4.1 to Figure 4.6).

**Figure 4.1: Ambient Air Quality in Cities of Central Zone w.r.t NO<sub>2</sub>****Figure 4.2: Ambient Air Quality in Cities of the East Zone w.r.t NO<sub>2</sub>**



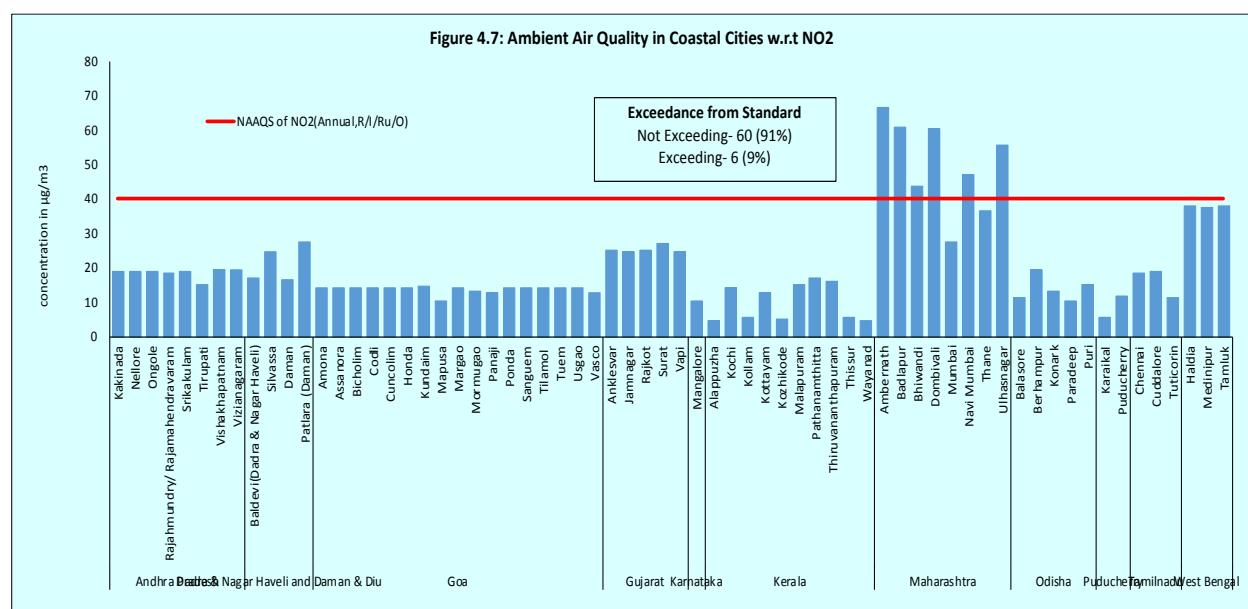
City in ecological sensitive area





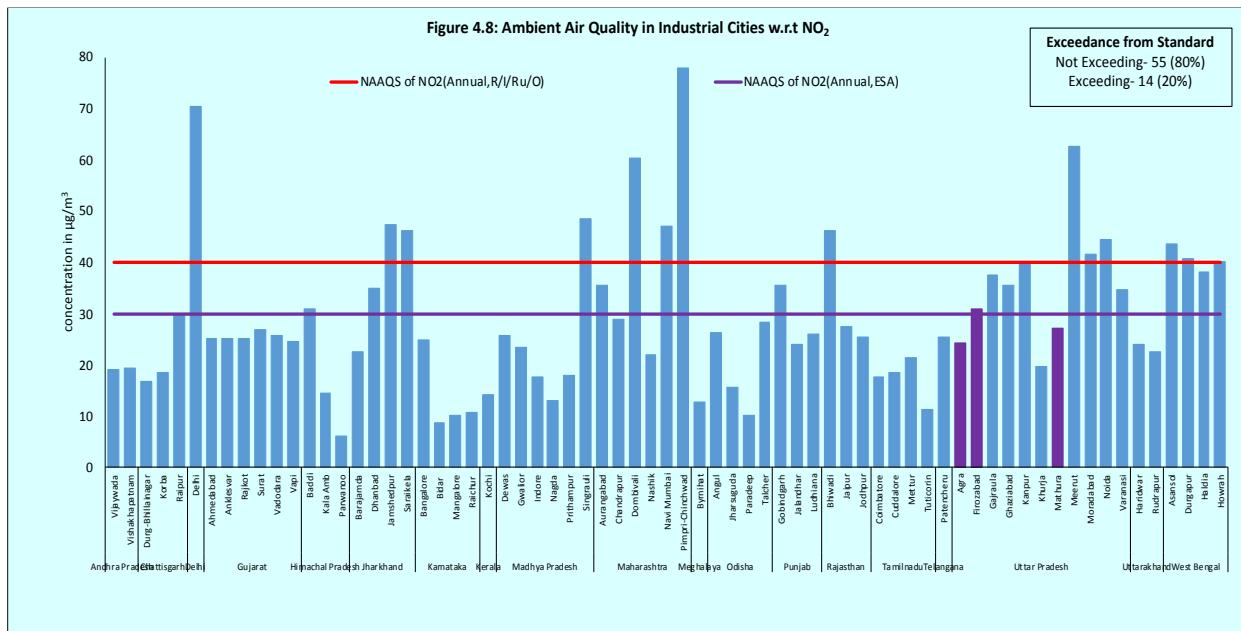
### 4.3 NO<sub>2</sub> in the coastal cities of the country

The level of NO<sub>2</sub> in the coastal cities are almost within NAAQS including the coastal cities with ports except for 6 of the cities of Maharashtra (Figure 4.7).



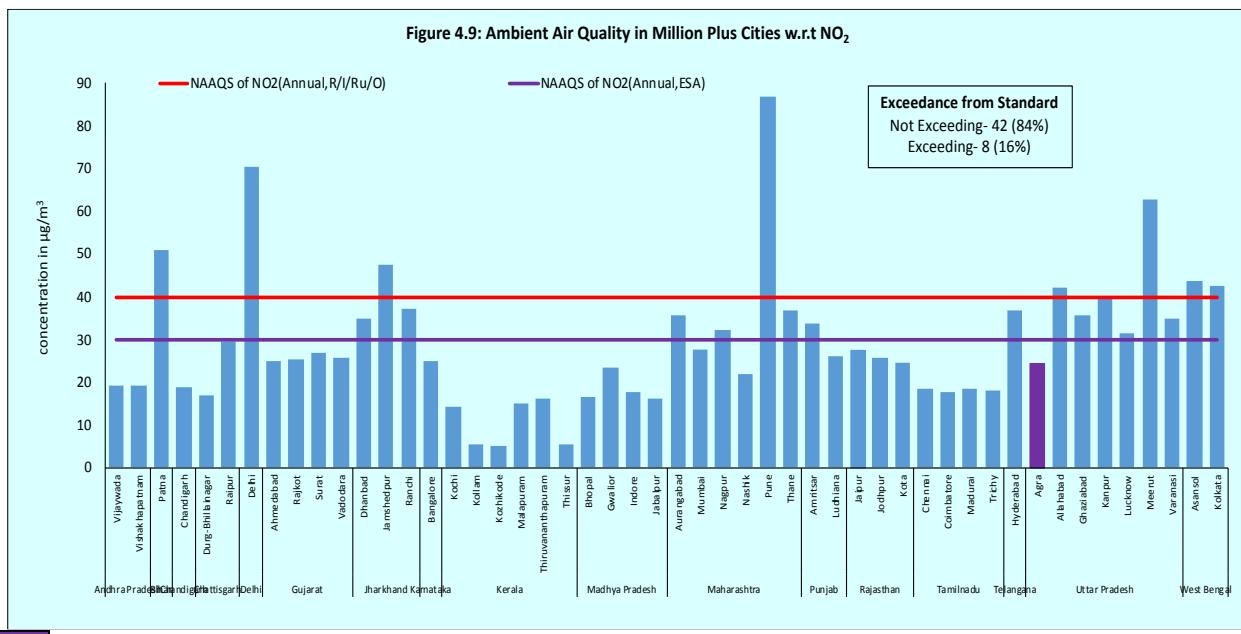
#### 4.4 NO<sub>2</sub> in the industrial cities of the country

Among the 69 industrial cities under NAMP, 12 cities exceed the NAAQS of 40 µg/m<sup>3</sup> in the industrial / residential and other area and 1 city exceed the NAAQS of 30 µg/m<sup>3</sup> in the ecologically sensitive area. (Figure 4.8).



#### 4.5 NO<sub>2</sub> in the million plus cities (population >10 lakhs) of the country

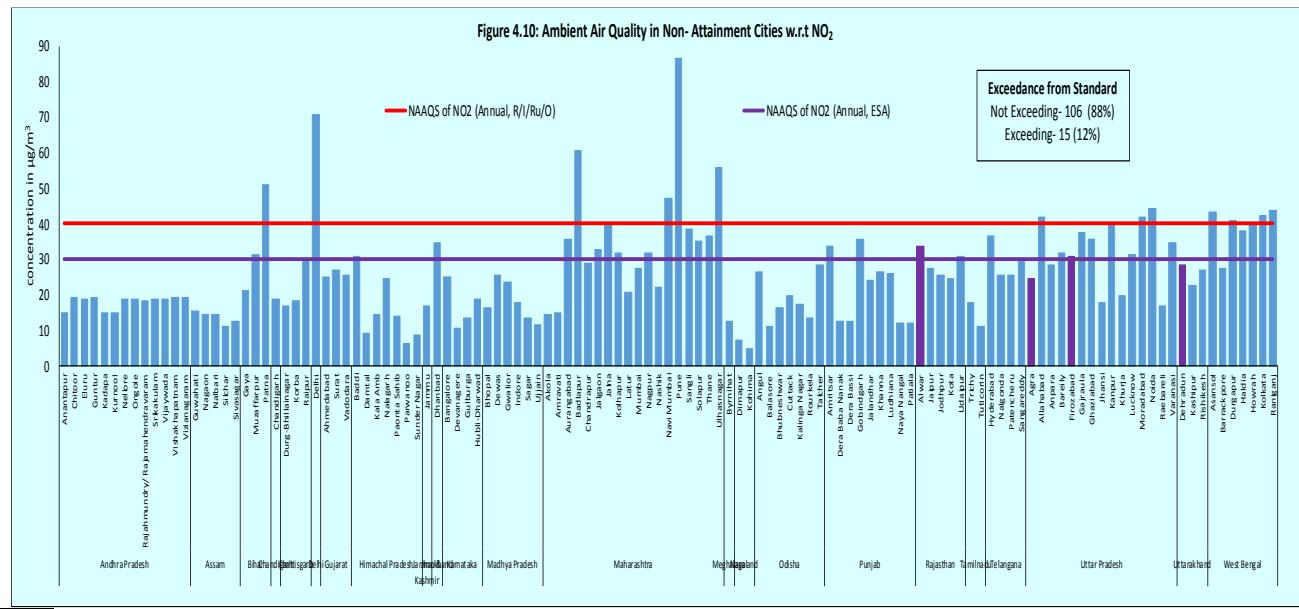
Among the 53 million plus cities, 8 cities exceed the NAAQS of 40 µg/m<sup>3</sup> in the residential / industrial and other areas. (Figure 4.9).



City in ecological sensitive area

#### 4.5 NO<sub>2</sub> in the Non- attainment cities of the country

Among the 122 non- attainment cities, 14 cities exceed the NAAQS of 40 µg/m<sup>3</sup> in the residential / industrial and other areas and 1 cities exceed the NAAQS of 30 µg/m<sup>3</sup> in the ecologically area (Figure 4.10).



City in ecological sensitive area

## 5.0 Particulate Matter (PM<sub>10</sub>)

Particulate matter is a complex mixture of suspended solid and liquid particle in semi equilibrium with surrounding gases. It is classified in different ways:

a. Classification on emission:

- Primary PM: Particulate Matter is called primary if it is in the same chemical term in which it is emitted into the atmosphere. The primary particulate matter includes wind blown dust such as road dust, fly ash, soot etc.
- Secondary PM: Particulate matter is called secondary if it is formed by chemical reactions in the atmosphere. Secondary particulate matter include sulphates, nitrates etc.

b. Classification on size: Table 5.1 and Figure 5.1 shows the classification and size of particulate matter

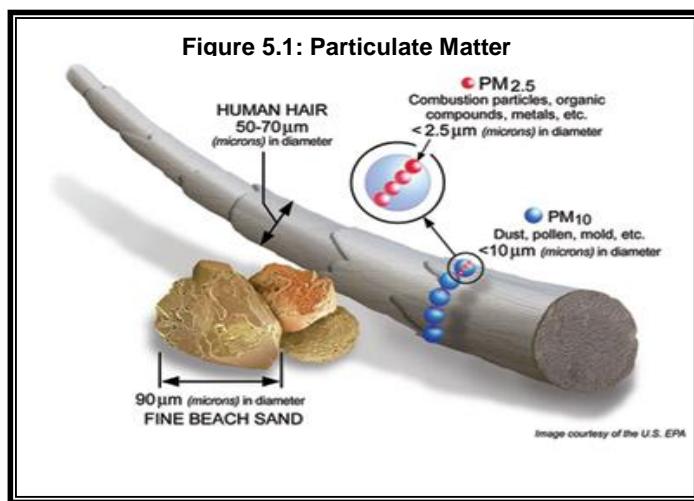
### Status of PM<sub>10</sub> in 2019

Particulate matter is a complex mixture of suspended solid & liquid particles in semi equilibrium with surrounding gases. PM<sub>10</sub>, size  $\leq 10\mu\text{m}$ . The major constituents are organic and elemental carbon, metals/elements like silicon, magnesium, iron, ions like sulphates, nitrates, ammonium etc. It can settle in the bronchi and lungs and cause health problems

The central, north-east and south zones have comparatively lower level of PM<sub>10</sub> than east, north and west zones. Among the 73 coastal cities under NAMP, 44 cities exceed the NAAQS. 62 industrial cities and 44 million plus cities exceed the national standard. Among the 122 non - attainment cities, 111 cities exceed national standard.

**Table 5.1 Classification of particulate matter**

| Fraction   | Size range   |
|--|--|
| Respirable Suspended Particulate Matter (RSPM) or PM <sub>10</sub> (thoracic fraction) | <ul style="list-style-type: none"> <li>• <math>\leq 10\mu\text{m}</math> diameter</li> <li>• produced by mechanical attrition of dusts</li> <li>• lung deposition principally by impaction</li> <li>• <math>2.5\mu\text{m} - 10\mu\text{m}</math> is called coarse fraction</li> </ul>   |
| Accumulation mode or Fine particles or PM <sub>2.5</sub> (respirable fraction)         | <ul style="list-style-type: none"> <li>• <math>\leq 2.5\mu\text{m}</math> in diameter</li> <li>• composed mainly of carbonaceous materials (organic and elemental), inorganic compounds (sulfate, nitrate, and ammonium), and trace metal compounds (iron, aluminium, nickel, copper, zinc, and lead)</li> <li>• penetrates deeper into the lungs</li> <li>• increases respiratory symptoms, causes irritation of the airways, coughing, or difficulty breathing, decreases lung function; aggravates asthma, chronic bronchitis, irregular heartbeat, nonfatal heart attacks, premature death in people with heart or lung disease</li> </ul> |
| Ultrafine Particles (UFP)  | <ul style="list-style-type: none"> <li>• <math>\leq 0.1\mu\text{m}</math> large surface area to mass ratio</li> <li>• making them potential carriers of harmful gaseous compounds</li> <li>• cause severe pulmonary inflammation and hemorrhage, high degree of alveolar and interstitial edema, disruption of epithelial and endothelial cell layers and even death</li> </ul>  |



a. Based on the generation mechanism, PM are categorized into

- Dispersion Originated- the particulate originated from wind generated movement in nature as well as manmade or from the breakdown from liquid or solid bulk materials, i.e. by grinding, atomization, natural dispersion, wind erosion etc. Eg. Dust (Dispersion Originated) is produced by subdivision of solid material through mechanical actions or in nature. Anthropogenic emissions are generated during grinding or milling of materials, during transfer of finely divided material as well as from agriculture, forestry and construction activities. The larger the particle diameter, they tend to settle faster. The rate of settling also depends on density and shape of particles. Particles larger than 50  $\mu\text{m}$  settle rapidly.
  - Condensation Originated - build up from molecular dimension after heating and cooling. Eg. Fumes (Condensation Originated) are produced from hot solid substances by vaporization and condensation usually industrial process originated, combustion originated or from metallurgical processes.
- Mist (Dispersion & Condensation Originated) is generated from liquid by mechanical actions, evaporation and/or condensation of vapors generated from Industrial processes, spraying, electroplating etc.

Respirable Suspended Particulate Matter or PM<sub>10</sub> are the particles with upper size limited by a 50% cut at 10  $\mu\text{m}$  aerodynamic diameter (USEPA, 1996). They consist of particles with a diameter up to 10  $\mu\text{m}$ . The major constituents of PM<sub>10</sub> are organic and elemental carbon, metals/elements like silicon, magnesium, iron, ions like sulphates, nitrates, ammonium etc. PM<sub>10</sub> can be formed by physical processes of crushing, grinding and abrasion of surfaces. Mining and agricultural activities are some of the sources of large size particles. The anthropogenic source are mechanical break-up of larger solid particles, wind blown dust such as road dust, fly ash, soot, agricultural processes, physical processes of crushing, grinding and abrasion of surfaces, photo chemically produced particles, such as those found in urban haze, pollen grains, mould spores, and plant and insect parts, combustion of fossil fuel (coal, heavy fuel oil in thermal power plants, office, factories), paper Industry, extraction & distribution of fossil fuels, smelting of metals (sulfide ores to produce copper, lead and zinc), petroleum refining, combustion process in diesel, petrol, natural gas driven vehicles. PM<sub>10</sub> can settle in the bronchi and lungs and cause health problems like respiratory illness, visibility impairment, aggravate existing heart and lung diseases. It also causes visibility reduction. A compilation of sources and effects of PM<sub>10</sub> are given in Annexure 1.

In this chapter, a detailed comparison of locations and cities with respect to PM<sub>10</sub> levels in the country has been.

### 5.1 Locations and cities exceeding the NAAQS

Table 5.2 shows the number of locations and cities exceeding the NAAQS with respect to PM<sub>10</sub> during 2019. During 2019 in residential / Industrial / Rural area 577 location exceed NAAQS of 60  $\mu\text{g}/\text{m}^3$  and in ecologically Sensitive area 17 locations exceed NAAQS of 60  $\mu\text{g}/\text{m}^3$ . Taking cities into consideration, in

residential / Industrial / Rural area 246 cities exceed NAAQS of 60 µg/m<sup>3</sup> and in ecologically Sensitive area 5 cities exceed NAAQS of 60 µg/m<sup>3</sup>.

**Table 5.2. Number of locations and cities exceeding the NAAQS with respect to PM<sub>10</sub>**  
**(Based on annual average data in µg/m<sup>3</sup>)**

|  | No. of locations                      |                             | Number of cities                      |                             |
|--|---------------------------------------|-----------------------------|---------------------------------------|-----------------------------|
|  | Residential / Industrial / Rural area | Ecologically Sensitive area | Residential / Industrial / Rural area | Ecologically Sensitive area |
|  | NAAQS >60                             | NAAQS >60                   | NAAQS >60                             | NAAQS >60                   |
| Not exceeding NAAQS (NE)   | 154                                   | 0                           | 70                                    | 0                           |
| Exceeding NAAQS (E)  | 577                                   | 17                          | 246                                   | 5                           |
| Inadequate data (ID)   | 27                                    | 0                           | 11                                    | 0                           |
| No data (ND)   | 29                                    | 0                           | 12                                    | 0                           |
| <b>Total monitoring stations / cities (NE &amp; E &amp; ID &amp; ND)</b> | <b>787</b>                            | <b>17</b>                   | <b>339</b>                            | <b>5</b>                    |

### Locations:

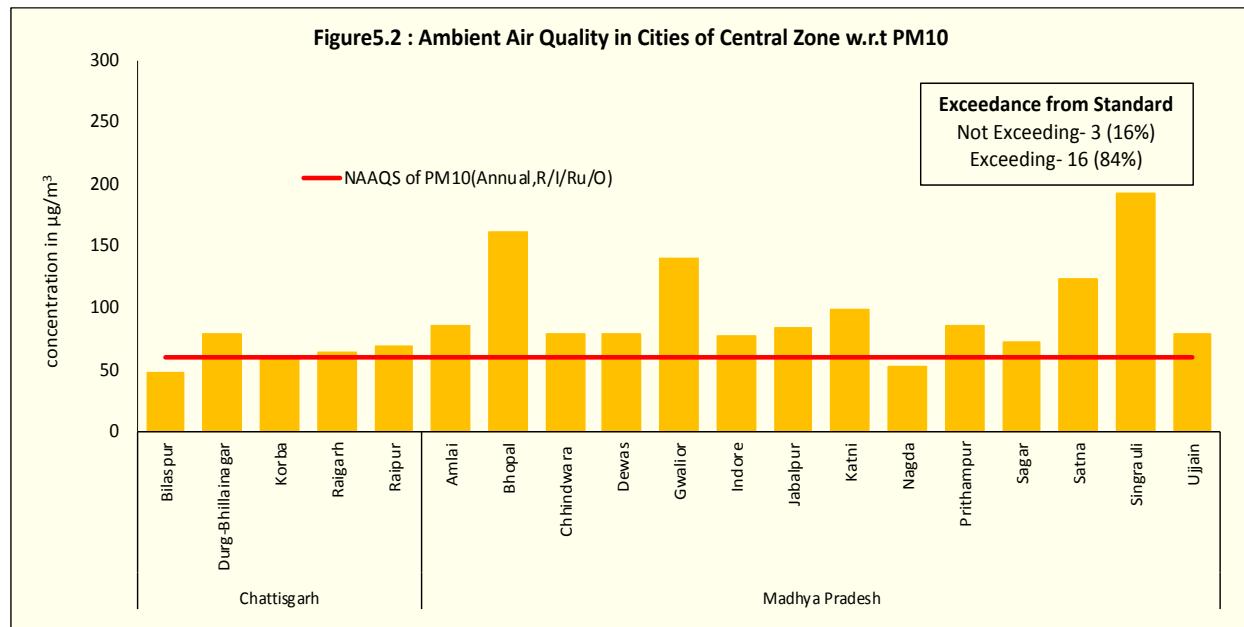
The location with highest level of PM<sub>10</sub> (annual average) during 2019 is India Glycol Ltd. Gida, Gorakhpur, Uttar Pradesh with 351 µg/m<sup>3</sup> in Residential / Industrial / Rural area and Nunhai, Agra, Uttar Pradesh with 228 µg/m<sup>3</sup> in Ecologically Sensitive area.

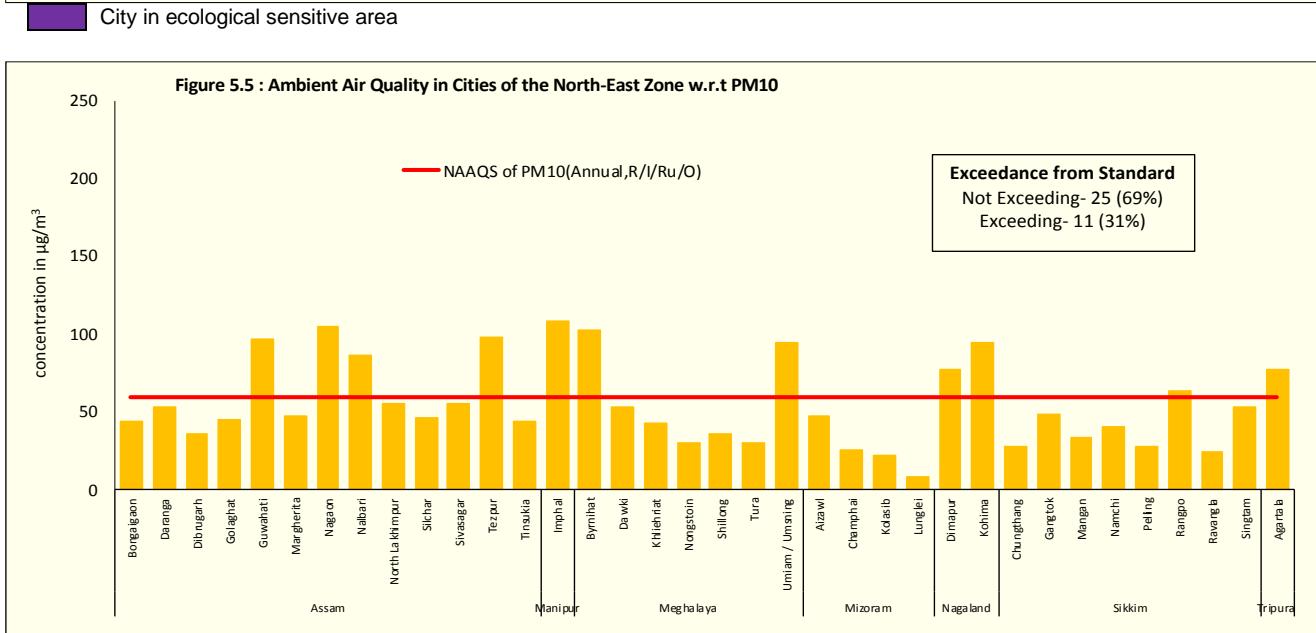
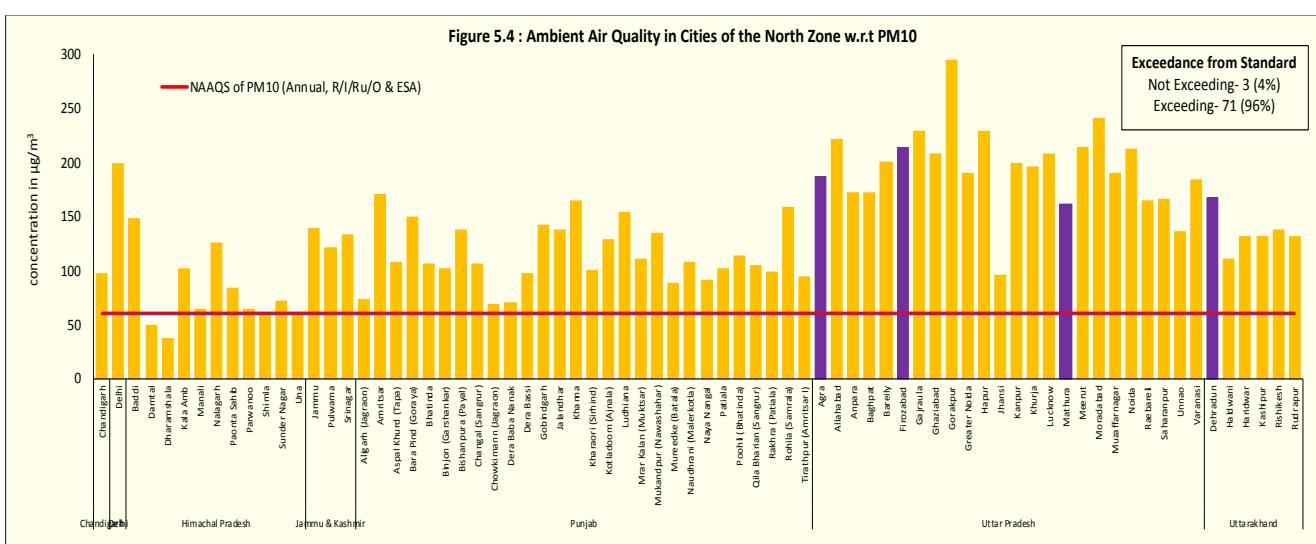
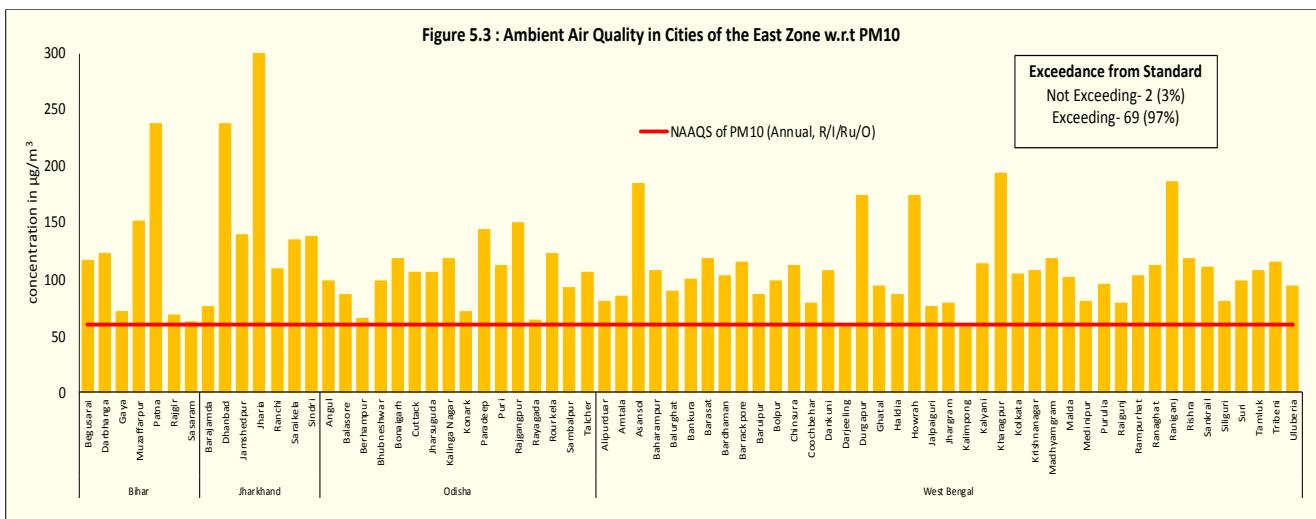
### City:

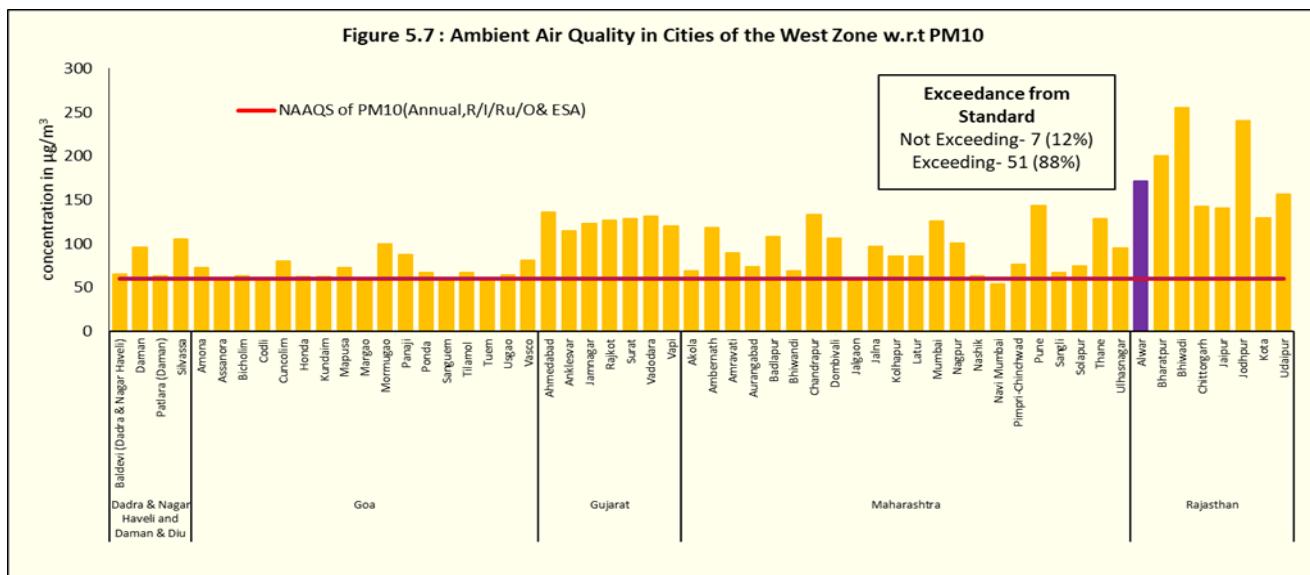
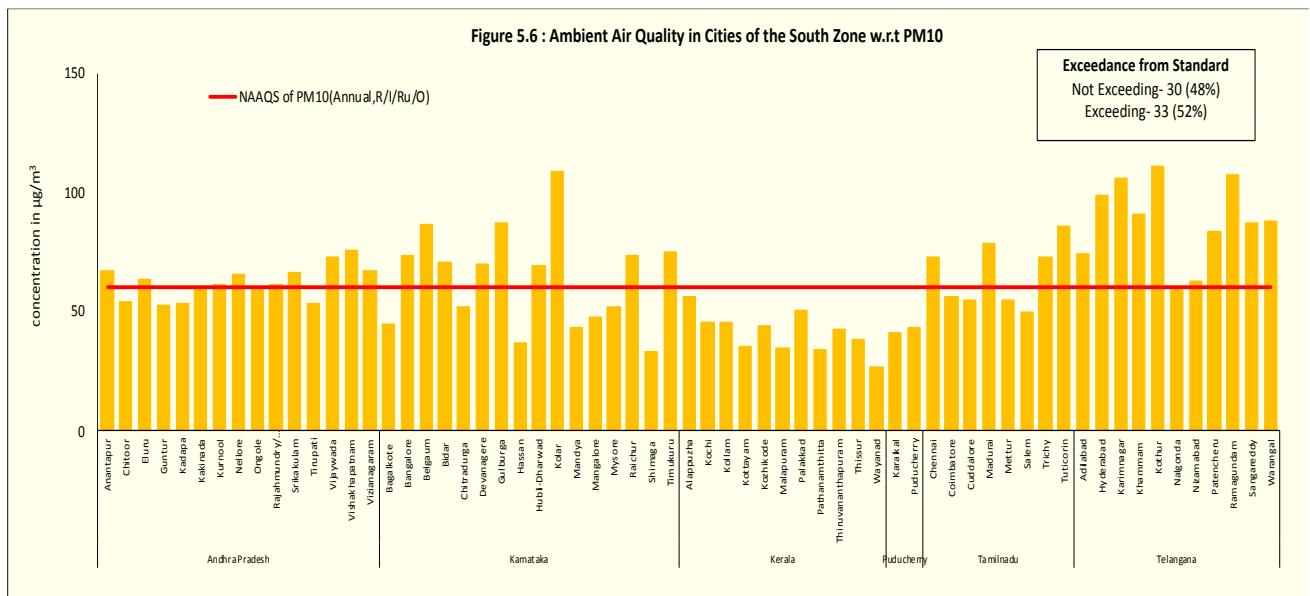
Ambient air quality data with respect to PM<sub>10</sub> is given in **Annexure 5**. The city (Residential / Industrial / Rural area) with highest level of PM<sub>10</sub> (annual average) during 2019 is Jharia, Jharkhand with 302 µg/m<sup>3</sup> and Firozabad, Uttar Pradesh (Ecologically Sensitive area) with 214 µg/m<sup>3</sup>.

### 5.2 PM<sub>10</sub> in different zones of the country

The graphs below compares the ambient air quality with respect to PM<sub>10</sub> in different zones of the country. It can be seen that the central, north-east and south zones have comparatively lower level of PM<sub>10</sub> than east, north and west zones (Figure 5.2 to 5.7).



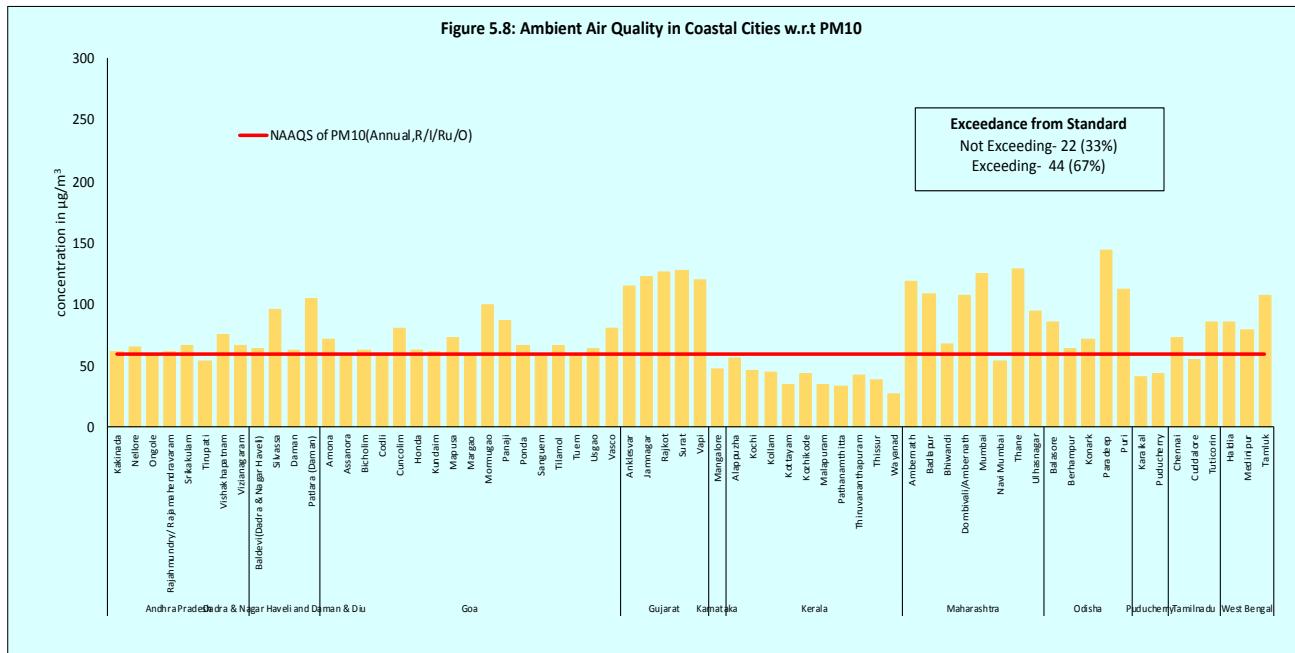




  City in ecological sensitive area

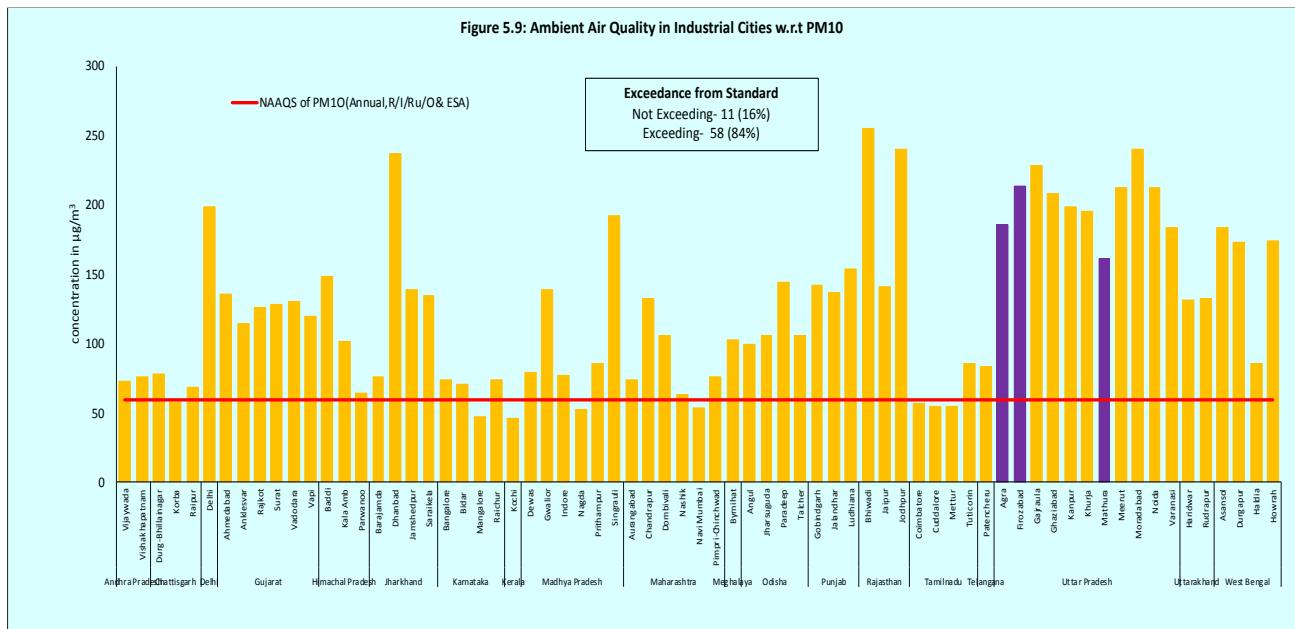
### 5.3 PM<sub>10</sub> in the coastal cities of the country

Among the 73 coastal cities under NAMP, 44 cities exceed the NAAQS of 60 µg/m<sup>3</sup> in the industrial / residential and out of which 13 cities have a port (Figure 5.8).



#### **5.4 PM<sub>10</sub> in the industrial cities of the country**

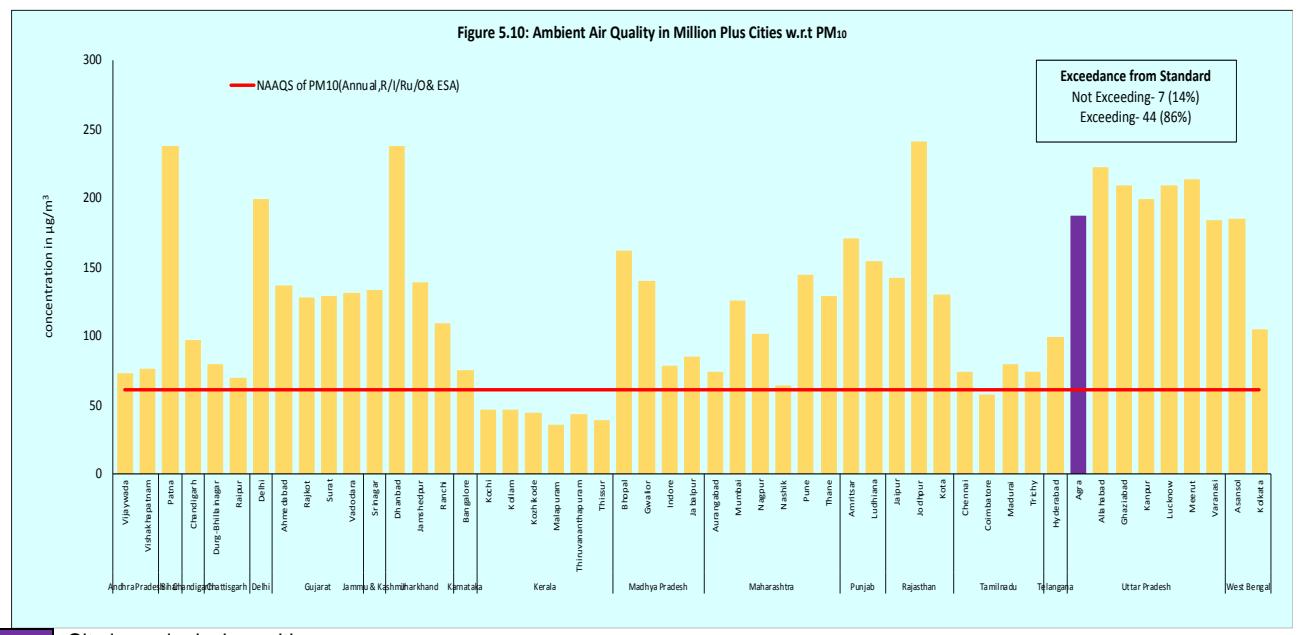
Among the 69 industrial cities under NAMP, 62 cities in the industrial / residential exceed and ecologically sensitive area exceed the NAAQS of  $60 \mu\text{g}/\text{m}^3$  (Figure 5.9).



## City in ecological sensitive area

## 5.5 PM<sub>10</sub> in the million plus cities of the country

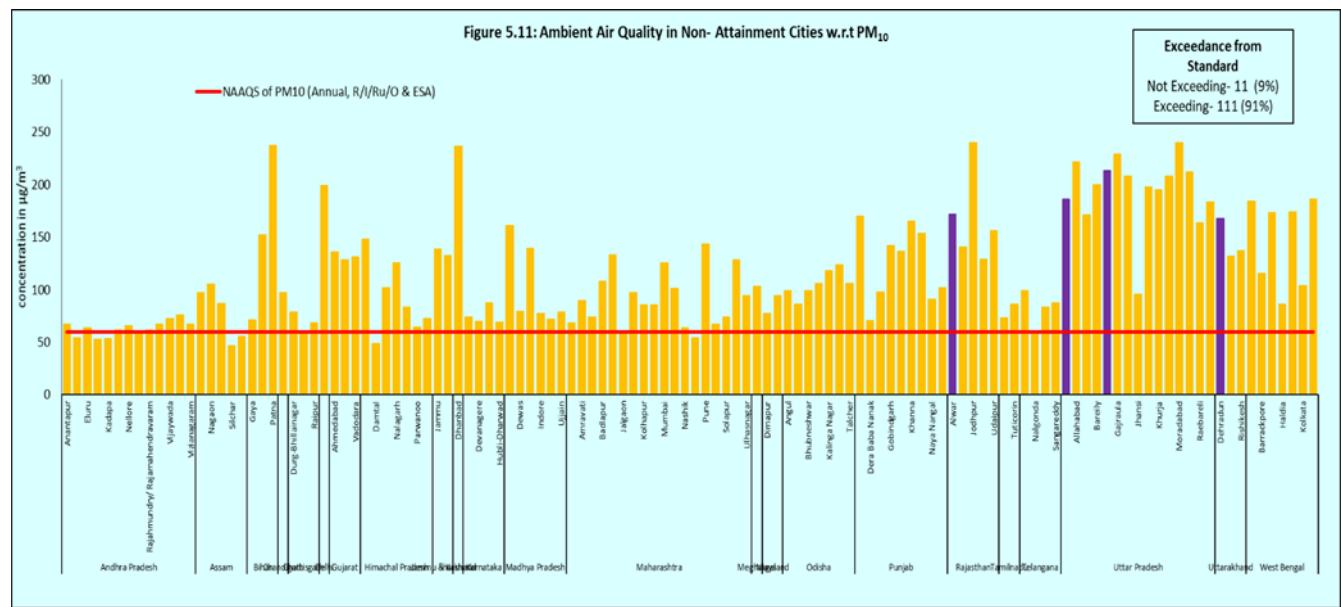
Among the 53 million plus cities, 43 cities in the industrial / residential and 1 city in the ecologically sensitive area exceed the NAAQS of 60 µg/m<sup>3</sup> (Figure 5.10). Out of the million plus cities 23 cities are industrial cities.



City in ecological sensitive area

## 5.6 PM<sub>10</sub> in the Non- attainment cities of the country

Among the 122 non - attainment cities, 107 cities in the industrial / residential and 4 cities in the ecologically sensitive area exceed the NAAQS of 60 µg/m<sup>3</sup> (Figure 5.11).



City in ecological sensitive area

## 6.0 Particulate Matter (PM<sub>2.5</sub>)

PM<sub>2.5</sub> describes fine inhalable particles, with diameters 2.5 micrometers and smaller. It can only be seen with an electron microscope. PM<sub>10</sub> is particulate matter 10 micrometers or less in diameter, PM<sub>2.5</sub> is particulate matter 2.5 micrometers or less in diameter. PM<sub>2.5</sub> is generally described as fine particles. By way of comparison, a human hair is about 100 micrometres, so roughly 40 fine particles could be placed on its width (Figure 6.1). There are outdoor and indoor sources of fine particles. Outside, fine particles primarily come from car, truck, bus and off-road vehicle (e.g., construction equipment, snowmobile, locomotive) exhausts, other operations that involve the burning of fuels such as wood, heating oil or coal and natural sources such as forest and grass fires. Fine particles are also formed from the reaction of gases or droplets in the atmosphere from sources such as power plants. These chemical reactions can occur miles from the original source of the emission.

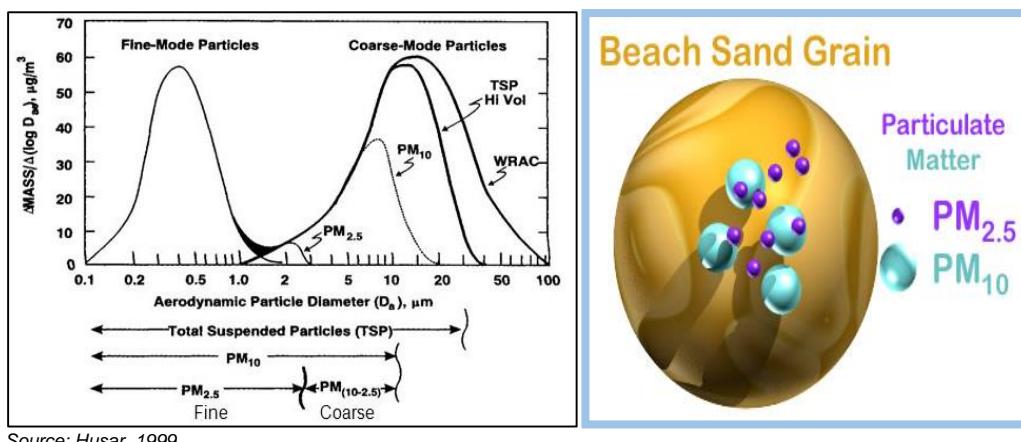
### Status of PM<sub>2.5</sub> in 2019

Particulate Matter 2.5 (PM<sub>2.5</sub>, size  $\leq 2.5\mu\text{m}$ ), are composed mainly of carbonaceous materials, inorganic compounds trace metal compounds. Penetrate into the gas exchange regions of the lung, and very small particles ( $< 100$  nanometers) may pass through the lungs to affect other organs and the smallest particles can get into the bloodstream and affect the cardiovascular system.

The central, south and north-east zones have lower concentration compared to east, north and west zones. Among the 73 coastal cities under NAMP, 5 cities exceed the NAAQS. 17 industrial cities and 11 million plus cities exceed the national standard. Among the 122 non-attainment cities, 24 cities exceed national standard.

Because fine particles can be carried long distances from their source, events such as wildfires or volcanic eruptions can raise fine particle concentrations hundreds of miles from the event. PM<sub>2.5</sub> can penetrate deep into the lung, irritate and corrode the alveolar wall, and consequently impair lung function. Though it has small diameter, large surface areas maybe capable of carrying various toxic stuffs, passing through the filtration of nose hair, reaching the end of the respiratory tract with airflow and accumulate there by diffusion, damaging other parts of the body through air exchange in the lungs.

Figure 6.1: Particulate matter



Source: Husar, 1999

In this chapter a detailed comparison of locations and cities with respect to PM<sub>2.5</sub> levels in the country has been.

### 6.1 Locations and cities exceeding the NAAQS

Table 6.1 shows the number of locations and cities exceeding the NAAQS with respect to PM<sub>2.5</sub> during 2019. During 2019 in residential / Industrial / Rural area 72 locations exceed NAAQS of 40  $\mu\text{g}/\text{m}^3$  and 4 locations exceed the NAAQS of 40  $\mu\text{g}/\text{m}^3$  in Ecologically sensitive area. Taking cities into consideration, in residential / Industrial / Rural area 39 cities exceed NAAQS of 40  $\mu\text{g}/\text{m}^3$  and 1 city exceed the NAAQS of 40  $\mu\text{g}/\text{m}^3$  in Ecologically sensitive area.

**Table 6.1. Number of locations and cities exceeding the NAAQS with respect to PM<sub>2.5</sub>**  
**(Based on annual average data in µg/m<sup>3</sup>)**

|   | No. of locations                      |                             | Number of cities                      |                             |
|---|---------------------------------------|-----------------------------|---------------------------------------|-----------------------------|
|   | Residential / Industrial / Rural area | Ecologically Sensitive area | Residential / Industrial / Rural area | Ecologically Sensitive area |
|   | NAAQS >40                             | NAAQS >40                   | NAAQS >40                             | NAAQS >40                   |
| Not exceeding NAAQS (NE)                              | 125                                   | 0                           | 77                                    | 0                           |
| Exceeding NAAQS (E)                                   | 72                                    | 4                           | 39                                    | 1                           |
| Inadequate data (ID)                                  | 114                                   | 2                           | 30                                    | 0                           |
| No data (ND)  | 0                                     | 0                           | 0                                     | 0                           |
| Total monitoring stations / cities (NE & E & ID & ND) | 311                                   | 6                           | 146                                   | 1                           |

### Locations:

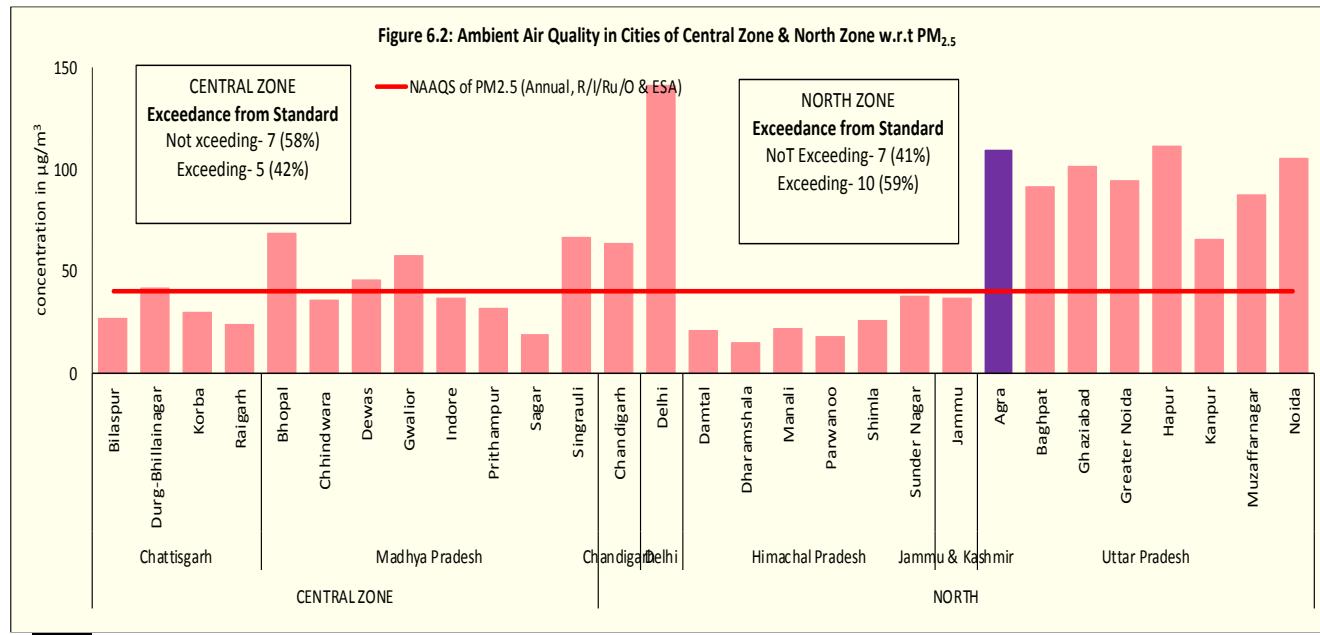
The location (Residential / Industrial / Rural area) with highest level of PM<sub>2.5</sub> (annual average) during 2019 is Pritampura, Delhi with 128 µg/m<sup>3</sup> and Etmad-uddaulah, Agra, Uttar Pradesh (Ecologically sensitive area) with 135 µg/m<sup>3</sup>.

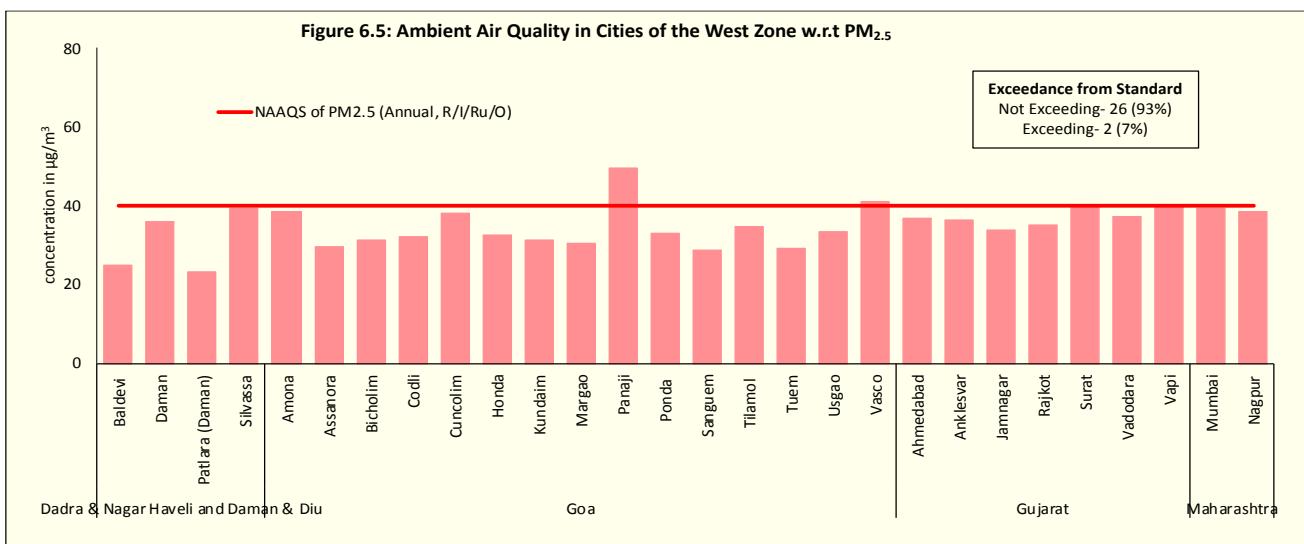
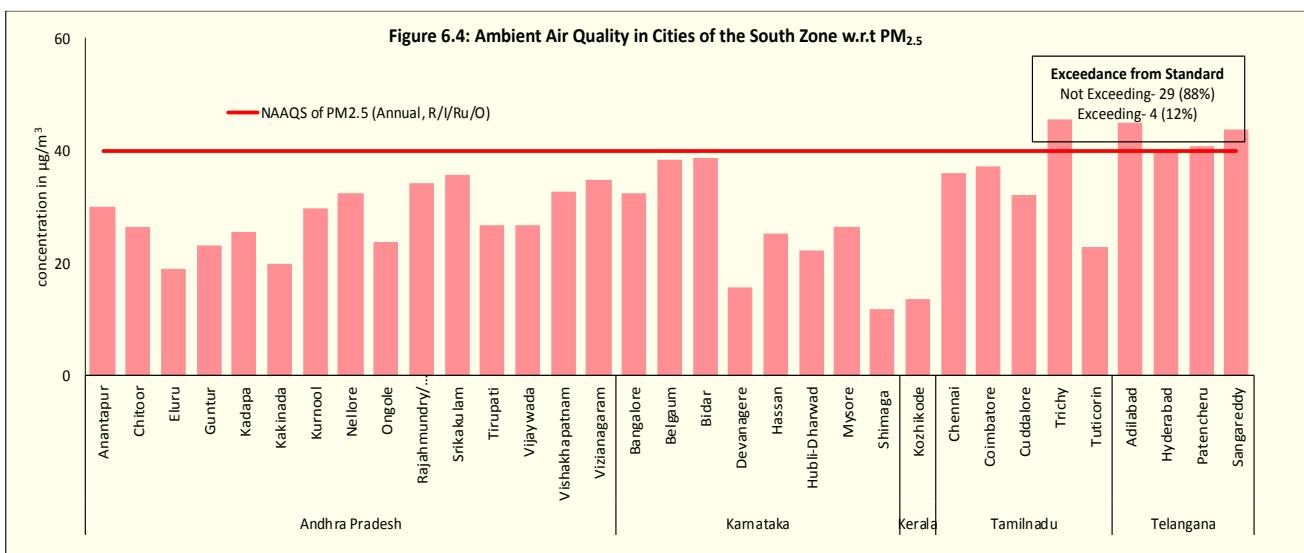
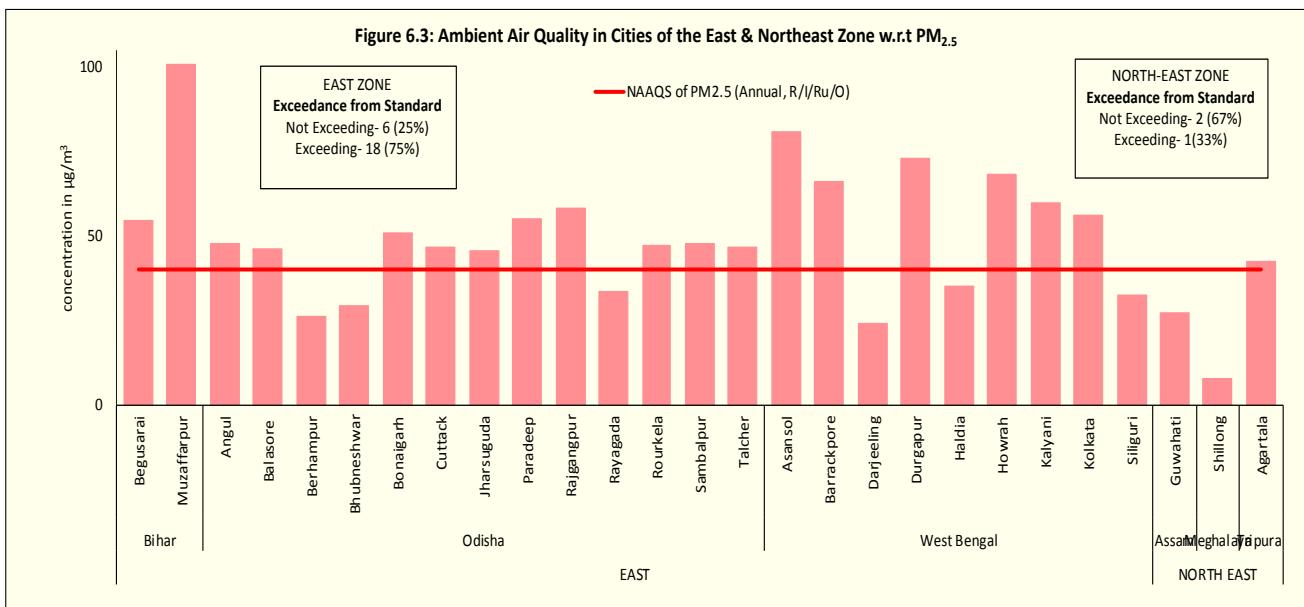
### City:

Ambient air quality data with respect to PM<sub>2.5</sub> is given in **Annexure 6**. The city (Residential / Industrial / Rural area) with highest level of PM<sub>2.5</sub> (annual average) during 2019 is Delhi with 141 µg/m<sup>3</sup> and Agra, Uttar Pradesh (Ecologically sensitive area) with 110 µg/m<sup>3</sup>.

### 6.2 PM<sub>2.5</sub> in different zones of the country

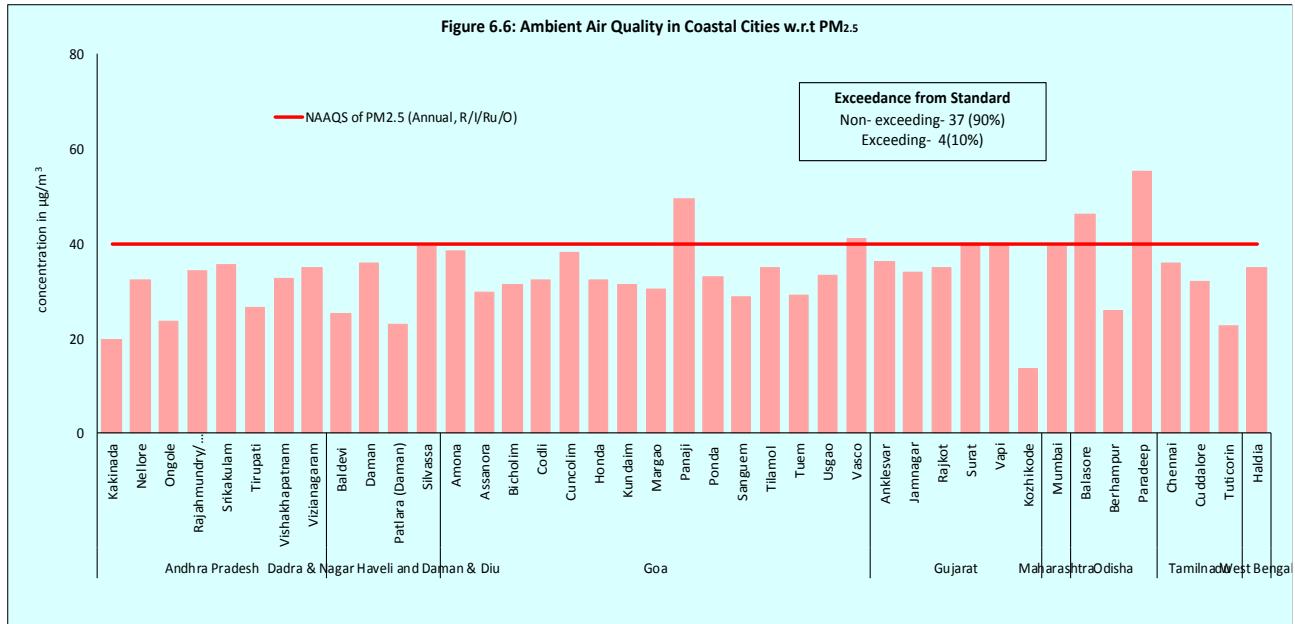
The graphs below compares the ambient air quality with respect to PM<sub>2.5</sub> in different zones of the county. It can be seen that the central, south and north-east zones have lower concentration compared to east, north and west zones (Figure 6.2 to 6.5).





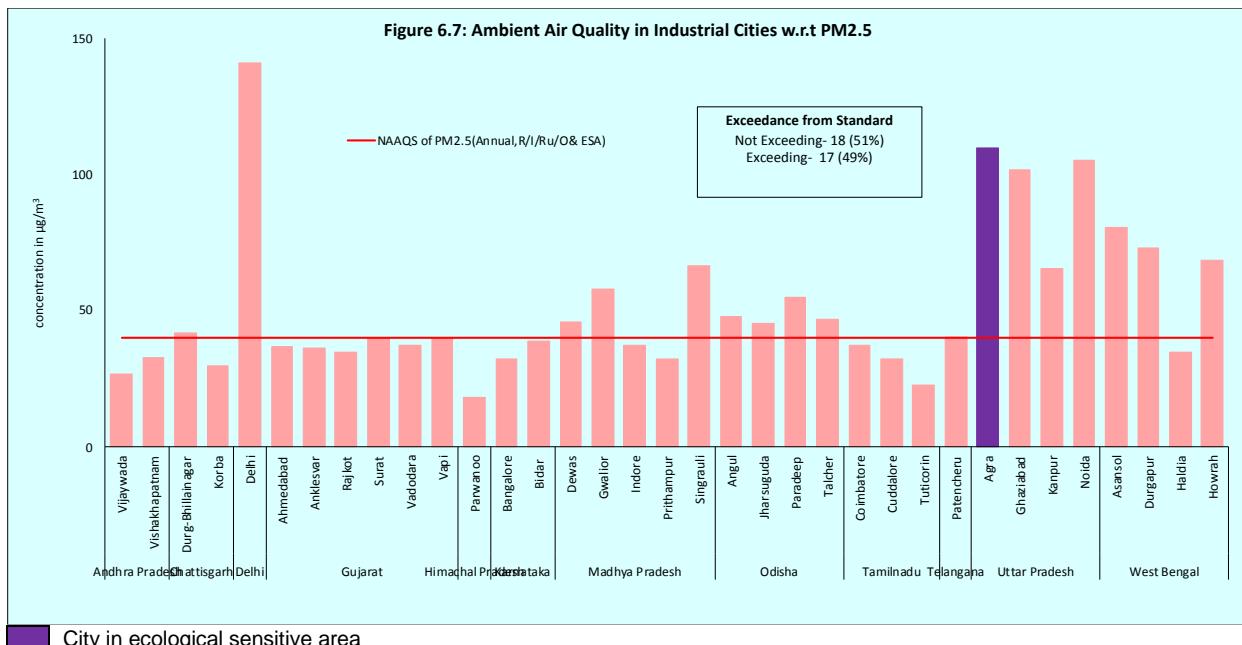
### 6.3 PM<sub>2.5</sub> in the coastal cities of the country

Among the 73 coastal cities under NAMP, PM<sub>2.5</sub> is monitored at 44 cities and among these 5 cities exceed the NAAQS of 40 µg/m<sup>3</sup> in the industrial / residential and out of which 2 cities have a port (Figure 6.6).



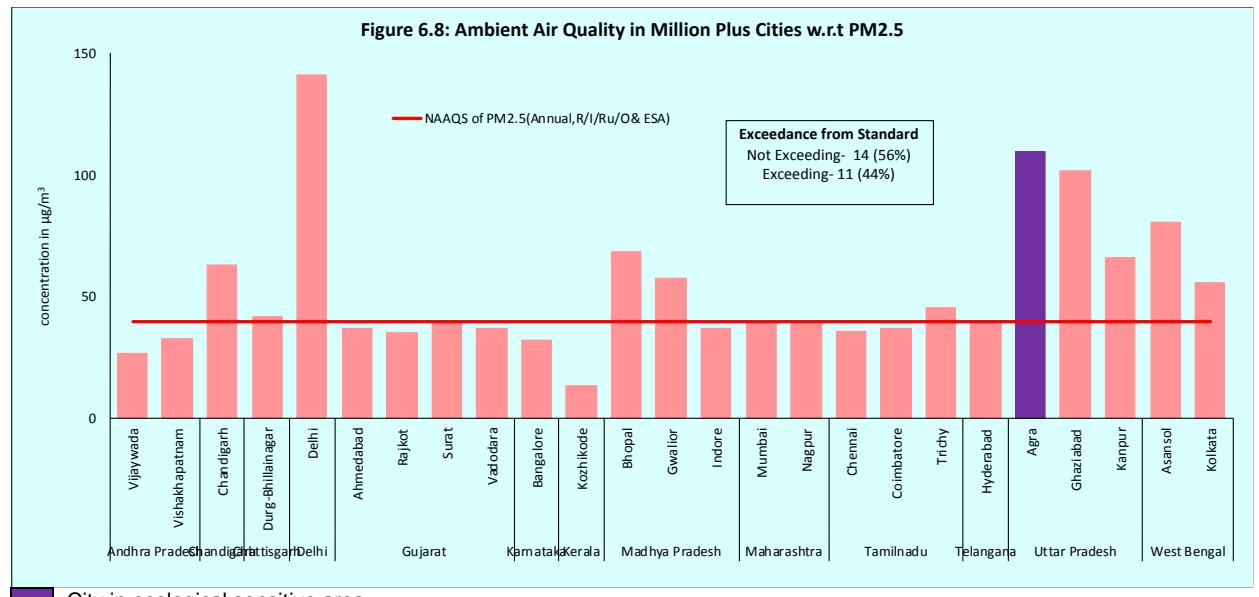
### 6.4 PM<sub>2.5</sub> in the industrial cities of the country

Among the 69 industrial cities under NAMP, PM<sub>2.5</sub> is monitored at 35 cities and among these 17 cities in the industrial / residential exceed the NAAQS of 40 µg/m<sup>3</sup> (Figure 6.7).



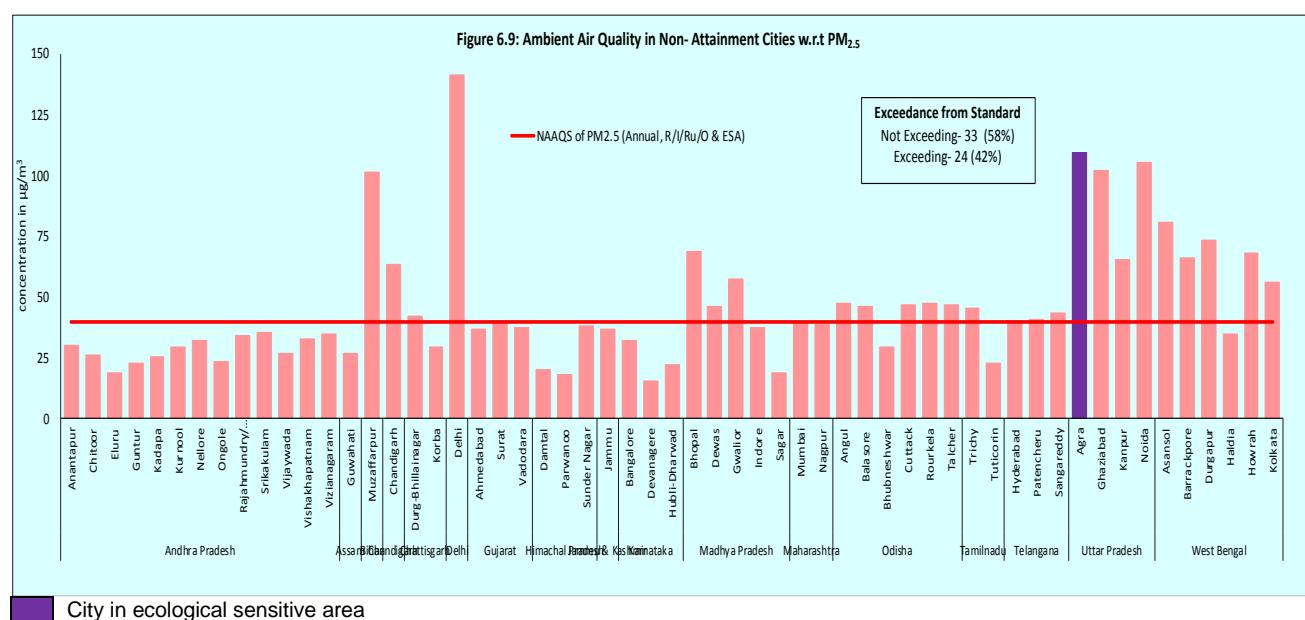
## 6.5 PM<sub>2.5</sub> in the million plus cities of the country

Among the 53 million plus cities, PM<sub>2.5</sub> is monitored at 28 cities and among these 10 cities in the industrial / residential and 1 city in ecologically sensitive area exceed the NAAQS of 40 µg/m<sup>3</sup> (Figure 6.8). Out of these million plus cities 7 cities are industrial cities.



## 6.6 PM<sub>2.5</sub> in the Non- attainment cities of the country

Among the 122 Non- attainment cities, PM<sub>2.5</sub> is monitored at 57 cities and among these 23 cities in the industrial / residential and 1 city in ecologically sensitive area exceed the NAAQS of 40 µg/m<sup>3</sup> (Figure 6.9). Out of these million plus cities 7 cities are industrial cities.



## 7.0 Million-plus cities

A **metropolitan area**, sometimes referred to as a **metro area or metro or million plus city**, is a region consisting of a densely populated urban core and its less-populated surrounding territories, sharing industry, infrastructure and housing. A metropolitan area usually comprises multiple jurisdictions and municipalities: neighborhoods, townships, cities, exurbs, counties, districts and even states. As social, economic and political institutions have changed, metropolitan areas have become key economic and political regions. Metropolitan areas include one or more urban areas, as well as satellite cities, towns and intervening rural areas that are socio-economically tied to the urban core, typically measured by commuting patterns.

In India as per Census of India 2011 **urban area or town** is defined as; 1. All places with a municipality, corporation, cantonment board or notified town area committee, etc. 2. All other places which satisfied the following criteria: *i) A minimum population of 5,000; ii) At least 75 per cent of the male main working population engaged in non-agricultural pursuits; and iii) A density of population of at least 400 persons per sq. km.*

The first category of urban units is known as **Statutory Towns**. These towns are notified under law by the concerned State/UT Government and have local bodies like municipal corporations, municipalities, municipal committees, etc., irrespective of their demographic characteristics as reckoned on 31st December 2009. Examples: Vadodara (M Corp.), Shimla (M Corp.) etc. The second category of Towns (as in item 2 above) is known as Census Town. These were identified on the basis of Census 2001 data.

In India as per Census 2011 an **Urban Agglomeration** (UA) is a continuous urban spread constituting a town and its adjoining outgrowths (OGs), or two or more physically contiguous towns together with or without outgrowths of such towns. An Urban Agglomeration must consist of at least a statutory town and its total population (i.e. all the constituents put together) should not be less than 20,000 as per the 2001 Census. In varying local conditions, there were similar other combinations which have been treated as urban agglomerations satisfying the basic condition of contiguity. Examples: Greater Mumbai UA, Delhi UA, etc.

An **Out Growth** (OG) is a viable unit such as a village or a hamlet or an enumeration block made up of such village or hamlet and clearly identifiable in terms of its boundaries and location. Some of the examples are railway colony, university campus, port area, military camps, etc., which have come up near a statutory town outside its statutory limits but within the revenue limits of a village or villages contiguous to the town. While determining the outgrowth of a town, it has been ensured that it possesses the urban features in terms of infrastructure and amenities such as pucca roads, electricity, taps, drainage system for disposal of waste water etc. educational institutions, post offices, medical facilities, banks etc. and physically contiguous with the core town of the UA. Examples: Central Railway Colony (OG), Triveni Nagar (N.E.C.S.W.) (OG), etc. Each such town together with its outgrowth(s) is treated as an integrated urban area and is designated as an 'urban agglomeration'. In the 2011 Census, 475 places with 981 OGs have been identified as Urban Agglomerations as against 384 UAs with 962 OGs in 2001 Census.

The constant growth and industrialization leads to increase in pollution. An inventory of air pollutants is a necessary first step towards control of air pollution. Air pollutants can be natural or may be the result of various anthropogenic activities like industrial emissions. Further the air pollutants can be primary or secondary depending upon their formation mechanism. Primary pollutants are directly emitted from the source and secondary pollutants are formed in the atmosphere. Meteorological factors play a critical role in ambient concentrations of air pollutants. Even though the total discharge of air pollutants into the atmosphere may remain constant, the ambient concentrations of air pollutants may vary depending upon the meteorological conditions. According to Census of India, 2011 conducted by the office of the Register General and Census Commissioner, India under Ministry of Home Affairs, Government of India the total urban population in the country is more than 377 million constituting 31.16% of the total population.

The cities are classified accordingly:

**Class I** UAs/Towns are the UAs/Towns which have **at least 1,00,000** persons as population. At the Census 2011, there are 468 such UAs/Towns. The corresponding number in Census 2001 was 394.

**Million Plus/UAs/Towns have One million or above** population which are the major urban centres in the country. 160.7 million persons (or 42.6% of the urban population) live in these Million Plus UAs/Cities.

In the above cities ambient air quality monitoring is required to determine the existing quality of air, evaluation of the effectiveness of control programme and to identify areas in need of restoration and their prioritization. This chapter gives an insight into the trends of air pollutants for SO<sub>2</sub>, NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> in the 53 million plus cities (population  $\geq$  10 lakh or 1 million; Census 2011). An analysis of five years data reveals a stable trend of SO<sub>2</sub> within the NAAQS. This may be attributed to various interventions that have taken place in recent years such as reduction in sulphur in diesel, use of cleaner fuel such as CNG in metro cities, change in domestic fuel from coal to LPG etc. NO<sub>2</sub> concentration has remained more or less stable in most of the cities over the years despite increase in sources like vehicles. The reason for this may be various intervention measures that have taken place such as improvement in vehicle technology and other vehicular pollution control measures like alternate fuel etc. PM<sub>10</sub> concentration shows fluctuating trend. Vehicular emission is a major source of PM<sub>10</sub>. Increasing number of vehicles may be a reason for this trend. The other reasons being emission from gensets, small scale industries, biomass incineration, suspension of traffic dust, natural dust, commercial and domestic use of fuel etc.

### 7.1 Ambient air quality stations in million-plus cities under NAMP during 2019

There are of 264 stations in million plus cities during 2019 (258 in Residential / industrial / rural / commercial areas and 6 in ecologically sensitive area. The analysis of air quality in metropolitan cities / million plus cities with respect to SO<sub>2</sub> reveals all the cities are within the NAAQS. With respect to NO<sub>2</sub>, 8 cities, PM<sub>10</sub>, 44 cities and PM<sub>2.5</sub> 10 cities exceed the NAAQS (Table 7.1). The air quality status in the metropolitan cities is given in Table 7.2.

Table 7.1: Status of Million plus (53 cities) during 2019

| Data type  | Number of cities                               |                 |                  |                   |                             |                 |                  |                   |
|--|--|-----------------|------------------|-------------------|-----------------------------|-----------------|------------------|-------------------|
|  | Residential / industrial / rural / other areas |                 |                  |                   | Ecologically sensitive area |                 |                  |                   |
|  | SO <sub>2</sub>                                | NO <sub>2</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> | SO <sub>2</sub>             | NO <sub>2</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> |
| Not exceeding NAAQS (NE)                               | 49   | 41              | 7                | 14                | 1                           | 1               | 0                | 0                 |
| Exceeding NAAQS (E)                                    | 0  | 8               | 43               | 10                | 0                           | 0               | 1                | 1                 |
| No data (ND)   | 2  | 2               | 1                | 0                 | 0                           | 0               | 0                | 0                 |
| Inadequate data (ID)                                   | 0  | 0               | 0                | 3                 | 0                           | 0               | 0                | 0                 |
| <b>Total monitoring stations (NE &amp; E &amp; ND)</b> | <b>51</b>                                      | <b>51</b>       | <b>51</b>        | <b>27</b>         | <b>1</b>                    | <b>1</b>        | <b>1</b>         | <b>1</b>          |

Key: No data: Monitoring not done or data not received for the particular parameter

**Table 7.2 Air quality in million plus cities during 2019**

| State           | City/Town          | District           | Zones | Coastal city | Indo-Gangetic plain | Industrial | NAC | No. of Station | Annual Average Concentration in $\mu\text{g}/\text{m}^3$ |                 |                  |                   |
|-----------------|--------------------|--------------------|-------|--------------|---------------------|------------|-----|----------------|--|-----------------|------------------|-------------------|
|                 |                    |                    |       |              |                     |            |     |                | SO <sub>2</sub>  | NO <sub>2</sub> | PM <sub>10</sub> | PM <sub>2.5</sub> |
| Andhra Pradesh  | Vijaywada          | Krishna            | S     |              |                     | IA         | NAC | 9              | 5  | 19              | 73               | 27                |
|                 | Vishakhapatnam     | Visakhapatnam      | S     | Co           |                     | IA         | NAC | 9              | 8  | 19              | 76               | 33                |
| Bihar           | Patna              | Patna              | E     |              | GB                  |            | NAC | 2              | 3  | 51              | 237              |                   |
| Chandigarh      | Chandigarh         | Chandigarh         | N     |              | IB                  |            | NAC | 5              | 2  | 19              | 97               | 63                |
| Chhattisgarh    | Durg-Bhillainagar  | Durg               | C     |              | GB                  | IA         | NAC | 4              | 7  | 17              | 79               | 42                |
|                 | Raipur             | Raipur             | C     |              | GB                  | IA         | NAC | 2              | 16   | 30              | 69               |                   |
| Delhi           | Delhi              | Delhi              | N     |              | GB                  | IA         | NAC | 10             | 5  | 70              | 199              | 141               |
| Gujarat         | Ahmedabad          | Ahmedabad          | W     |              |                     | IA         | NAC | 9              | 20   | 25              | 135              | 37                |
|                 | Rajkot             | Rajkot             | W     | Co           |                     |            |     | 2              | 20   | 25              | 127              | 35                |
|                 | Surat              | Surat              | W     | Co           |                     | IA         | NAC | 3              | 23   | 27              | 128              | 40                |
|                 | Vadodara           | Vadodara           | W     |              |                     | IA         | NAC | 5              | 20   | 26              | 131              | 37                |
| Haryana         | Faridabad          | Faridabad          | N     |              | IB+GB               | IA         |     | 2              |  |                 |                  |                   |
| Jammu & Kashmir | Srinagar           | Srinagar           | N     |              | IB                  |            | NAC | 3              |  |                 |                  | 132               |
| Jharkhand       | Dhanbad            | Dhanbad            | E     |              | GB                  | IA         | NAC | 3              | 14   | 35              | 237              |                   |
|                 | Jamshedpur         | East Singhbhum     | E     |              | GB                  | IA         |     | 2              | 38   | 47              | 138              |                   |
|                 | Ranchi             | Ranchi             | E     |              | GB                  |            |     | 1              | 18   | 37              | 109              |                   |
| Karnataka       | Bangalore          | Bengaluru Urban    | S     |              |                     |            | NAC | 9              | 3  | 25              | 74               | 32                |
| Kerala          | Kochi              | Ernakulam          | S     | Co           |                     | IA         |     | 8              | 3  | 14              | 46               | 32                |
|                 | Kollam             | Kollam             | S     | Co           |                     |            |     | 2              | 3  | 6               | 45               |                   |
|                 | Kozhikode          | Kozhikode          | S     | Co           |                     |            |     | 2              | 2  | 5               | 44               | 14                |
|                 | Malapuram          | Malappuram         | S     | Co           |                     |            |     | 2              | 2  | 15              | 35               |                   |
|                 | Thiruvananthapuram | Thiruvananthapuram | S     | Co           |                     |            |     | 4              | 9  | 16              | 42               |                   |
|                 | Thissur            | Thrissur           | S     | Co           |                     |            |     | 2              | 3  | 5               | 38               |                   |
| Madhya Pradesh  | Bhopal             | Bhopal             | C     |              | GB                  |            | NAC | 8              | 8  | 17              | 161              | 69                |
|                 | Gwalior            | Gwalior            | C     |              | GB                  | IA         | NAC | 2              | 13   | 24              | 139              | 58                |
|                 | Indore             | Indore             | C     |              | GB                  | IA         | NAC | 3              | 9  | 18              | 77               | 37                |
|                 | Jabalpur           | Jabalpur           | C     |              | GB                  |            |     | 2              | 7  | 16              | 84               |                   |
| Maharashtra     | Aurangabad         | Aurangabad         | W     |              |                     | IA         | NAC | 4              | 13   | 36              | 74               |                   |
|                 | Mumbai             | Mumbai City        | W     | Co           |                     |            | NAC | 3              | 2  | 27              | 125              | 40                |
|                 | Nagpur             | Nagpur             | W     |              |                     |            | NAC | 7              | 10   | 32              | 101              | 39                |
|                 | Nashik             | Nashik             | W     |              |                     | IA         | NAC | 4              | 10   | 22              | 63               |                   |
|                 | Pune               | Pune               | W     |              |                     |            | NAC | 3              | 37   | 87              | 143              |                   |
|                 | Thane              | Thane              | W     | Co           |                     |            | NAC | 3              | 20   | 37              | 128              |                   |
| Punjab          | Amritsar           | Amritsar           | N     |              | IB                  |            | NAC | 2              | 13   | 34              | 170              |                   |
|                 | Ludhiana           | Ludhiana           | N     |              | IB                  | IA         | NAC | 4              | 12   | 26              | 153              |                   |
| Rajasthan       | Jaipur             | Jaipur             | W     |              | IB+GB               | IA         | NAC | 9              | 7  | 27              | 141              |                   |
|                 | Jodhpur            | Jodhpur            | W     |              | IB+GB               | IA         | NAC | 9              | 7  | 26              | 240              |                   |

Chapter 7 : Air quality trend in million-plus cities

| State            | City/Town  | District             | Zo<br>ne<br>s | Coas<br>tal<br>city | Indo-<br>Gangetic<br>plain | Indu<br>strial | NAC | No. of<br>Station | Annual Average Concentration in<br>$\mu\text{g}/\text{m}^3$ |               |                  |                   |
|------------------|------------|----------------------|---------------|---------------------|----------------------------|----------------|-----|-------------------|---|---------------|------------------|-------------------|
|                  |            |                      |               |                     |                            |                |     |                   | $\text{SO}_2$   | $\text{NO}_2$ | $\text{PM}_{10}$ | $\text{PM}_{2.5}$ |
|                  | Kota       | Kota                 | W             |                     | IB+GB                      |                | NAC | 6                 | 7   | 24            | 129              |                   |
| Tamilnadu        | Chennai    | Chennai              | S             | Co                  |                            |                |     | 11                | 9   | 19            | 73               | 36                |
|                  | Coimbatore | Coimbatore           | S             |                     |                            |                |     | 3                 | 7   | 18            | 57               | 37                |
|                  | Madurai    | Madurai              | S             |                     |                            |                |     | 3                 | 13  | 18            | 79               | 26                |
|                  | Trichy     | Tiruchirappa<br>lli  | S             |                     |                            |                | NAC | 5                 | 13  | 18            | 73               | 46                |
| Telangana        | Hyderabad  | Hyderabad            | S             |                     |                            |                | NAC | 10                | 5   | 37            | 99               | 40                |
| Uttar<br>Pradesh | Agra       | Agra                 | N             |                     | GB                         | IA             | NAC | 6                 | 4   | 24            | 186              | 110               |
|                  | Allahabad  | Allahabad            | N             |                     | GB                         |                | NAC | 5                 | 5   | 42            | 222              |                   |
|                  | Ghaziabad  | Ghaziabad            | N             |                     | GB                         | IA             | NAC | 4                 | 13  | 35            | 208              | 102               |
|                  | Kanpur     | Kanpur<br>Nagar      | N             |                     | GB                         | IA             | NAC | 9                 | 6   | 40            | 198              | 66                |
|                  | Lucknow    | Lucknow              | N             |                     | GB                         |                | NAC | 8                 | 7   | 31            | 208              |                   |
|                  | Meerut     | Meerut               | N             |                     | GB                         | IA             |     | 2                 | 9   | 63            | 213              |                   |
|                  | Varanasi   | Varanasi             | N             |                     | GB                         | IA             | NAC | 5                 | 9   | 35            | 184              |                   |
| West<br>Bengal   | Asansol    | Paschim<br>Bardhaman | E             |                     | GB+BB                      | IA             | NAC | 3                 | 15  | 44            | 184              | 81                |
|                  | Kolkata    | Kolkata              | E             |                     | GB+BB                      |                | NAC | 21                | 8   | 42            | 104              | 56                |

NB. Agra (Taj-Trapezium) is in Ecologically sensitive area. The rest fall under Residential / industrial / rural / other areas

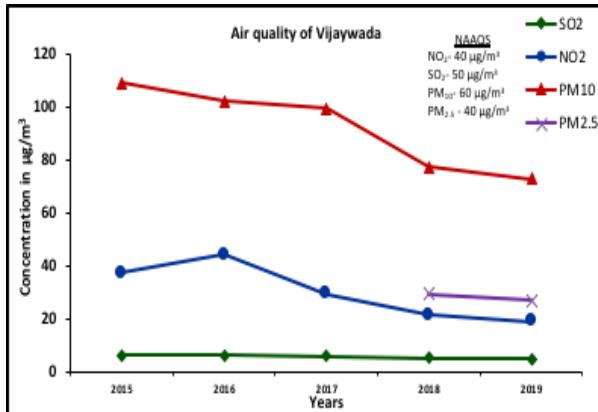
NAAQS (annual):  $\text{SO}_2=50 \mu\text{g}/\text{m}^3$ ,  $\text{NO}_2=40 \mu\text{g}/\text{m}^3$ ,  $\text{PM}_{10}=60 \mu\text{g}/\text{m}^3$ ,  $\text{PM}_{2.5}=40 \mu\text{g}/\text{m}^3$  (Residential / industrial / rural / other areas) and  $\text{SO}_2=20 \mu\text{g}/\text{m}^3$ ,  $\text{NO}_2=30 \mu\text{g}/\text{m}^3$ ,  $\text{PM}_{10}=60 \mu\text{g}/\text{m}^3$ ,  $\text{PM}_{2.5}=40 \mu\text{g}/\text{m}^3$  (Ecologically sensitive area)

RIRuO-Residential / industrial / rural / other areas, ESA- Ecologically sensitive area, N-North, E-East, W-West, S-South, NE-North East, C-Central, Co-Coastal cities, I-industrial, MP-milllion plus cities, NAC- Non attainment cities on the basis of 2014- 18 data.  $\text{SO}_2$ -Sulphur Dioxide,  $\text{NO}_2$ -Nitrogen Dioxide,  $\text{PM}_{10}$ -Particulate matter of aerodynamic size  $\leq 10$  micrometer in diameter,

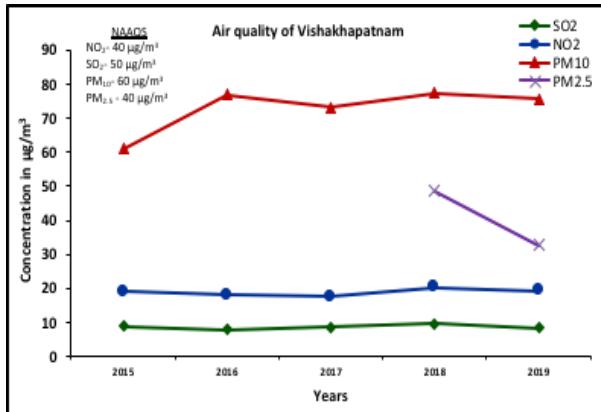
## 7.2 Air quality trend in million plus cities

### 7.3.1 ANDHRA PRADESH

#### Vijaywada

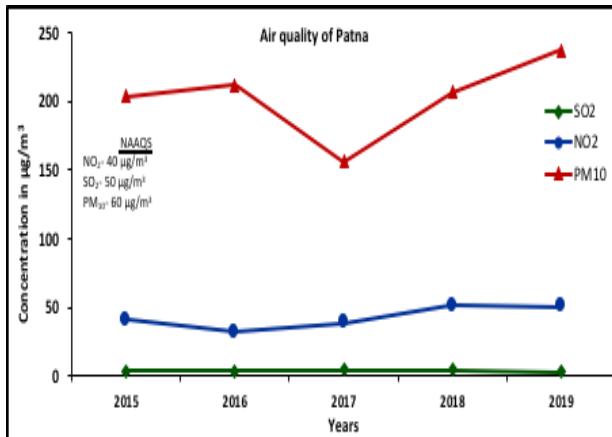


#### Vishakhapatnam



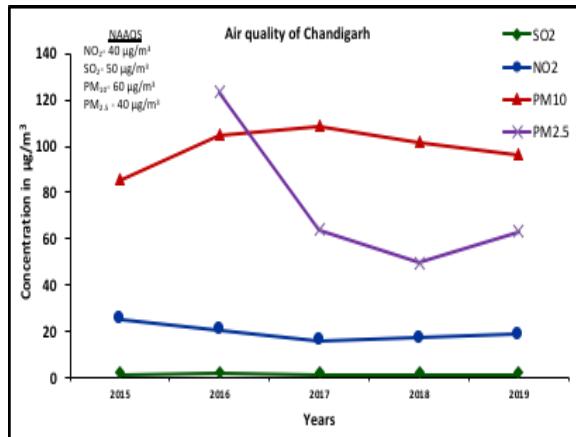
### 7.3.2 BIHAR

#### Patna



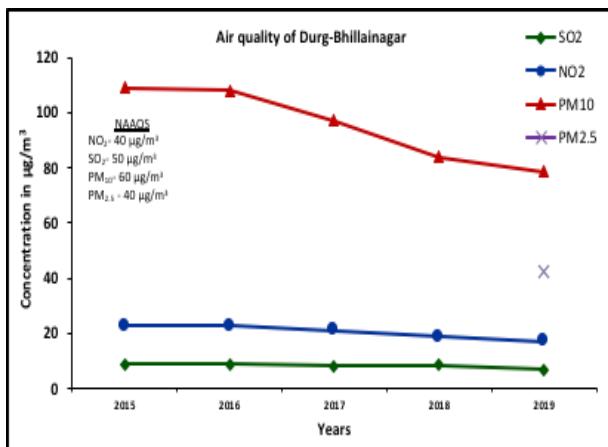
### 7.3.3 CHANDIGARH

#### Chandigarh

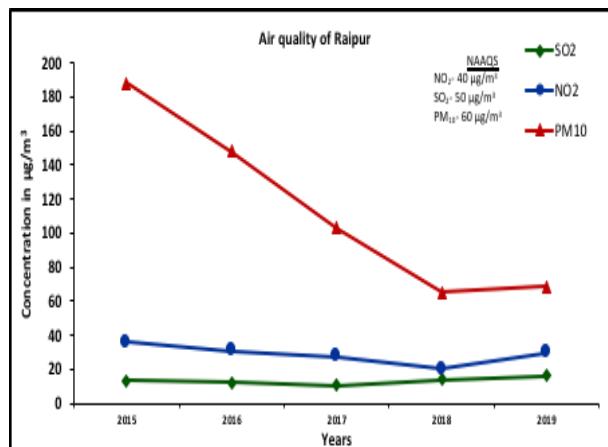


### 7.3.4 CHATTISGARH

#### Durg-Bhillainagar

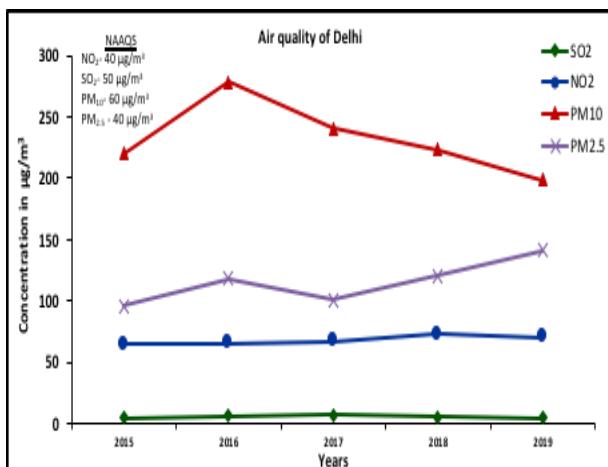


#### Raipur



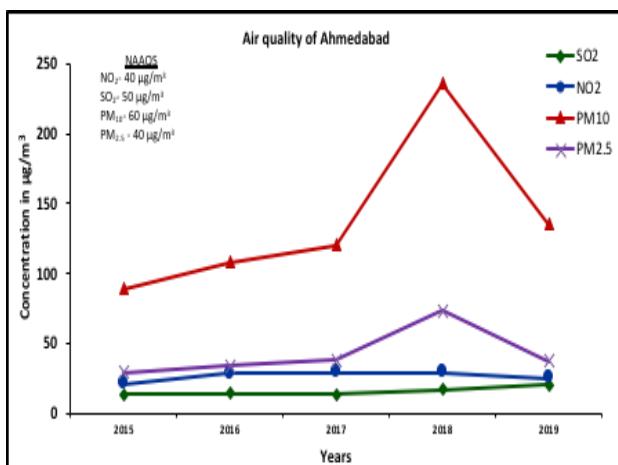
### 7.3.5 DELHI – THE CAPITAL CITY

#### Delhi

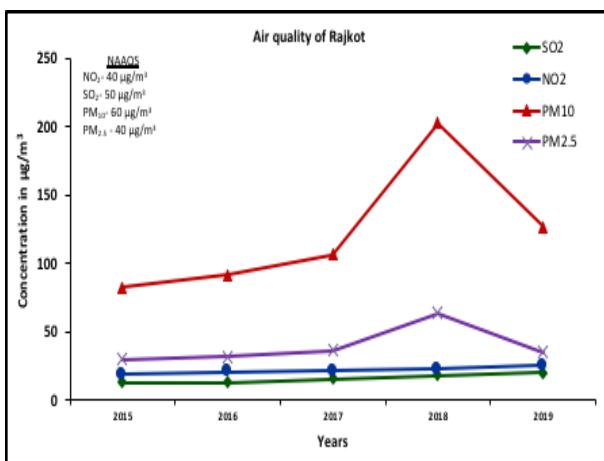


### 7.3.6 GUJARAT

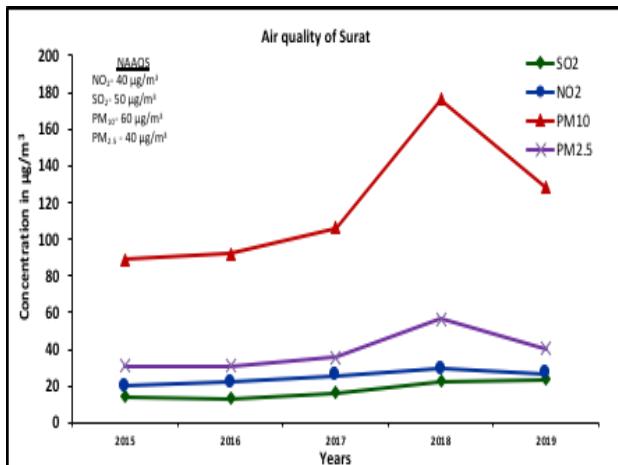
#### Ahmedabad



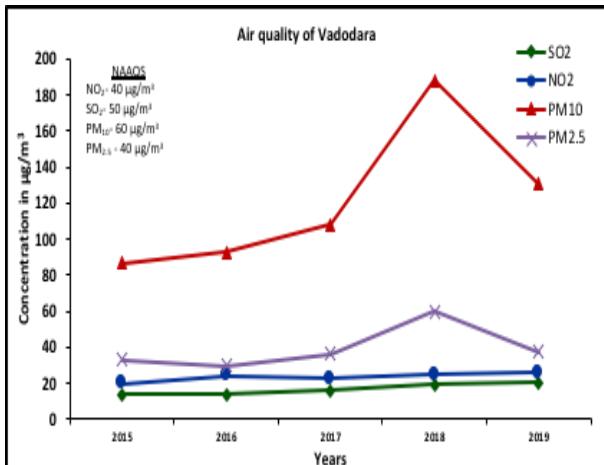
#### Rajkot



#### Surat

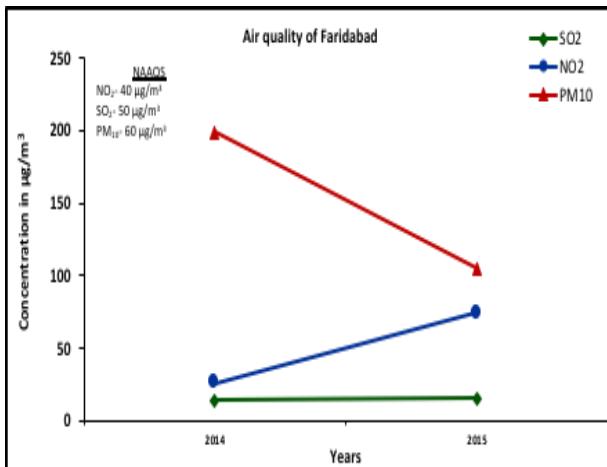


#### Vadodara



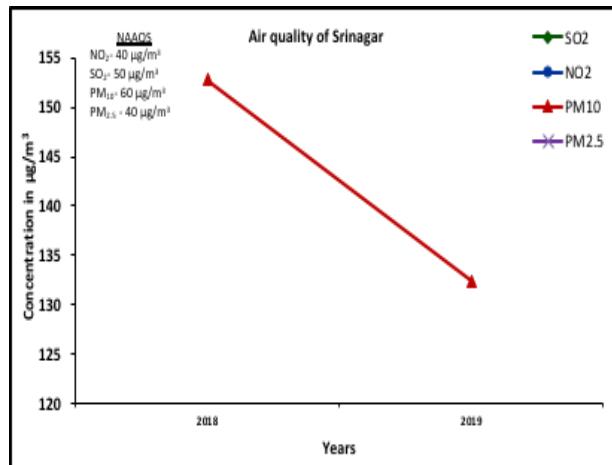
### 7.3.7 HARYANA

#### Faridabad



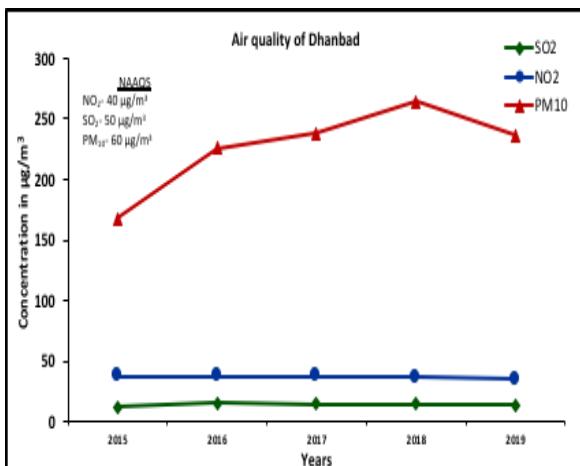
### 7.3.8 JAMMU & KASHMIR

#### Srinagar

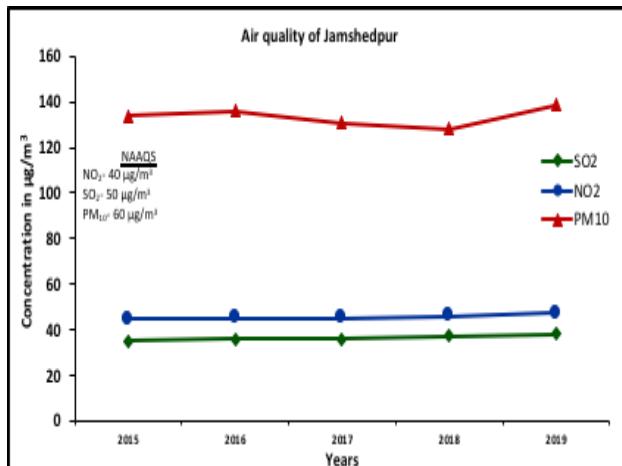


### 7.3.9 JHARKHAND

#### Dhanbad

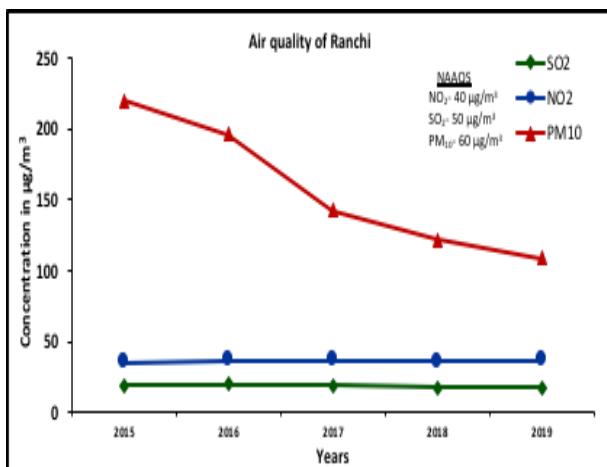


#### Jamshedpur

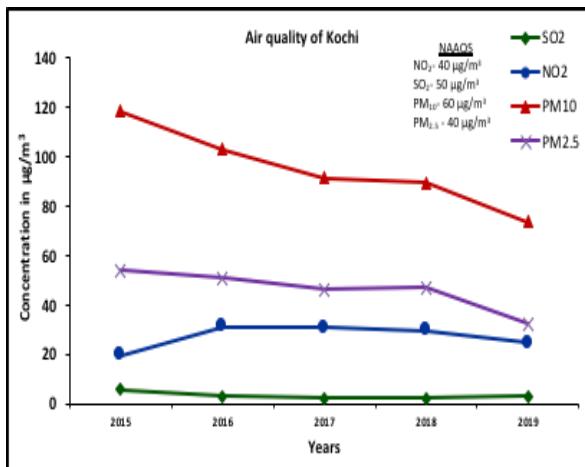


### 7.3.10 KARNATAKA

#### Ranchi

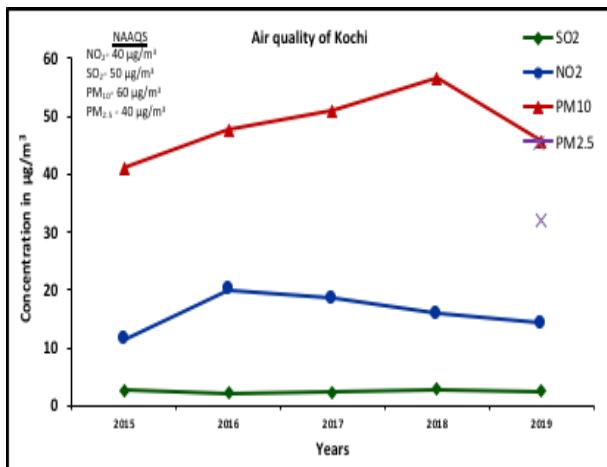


#### Bangalore

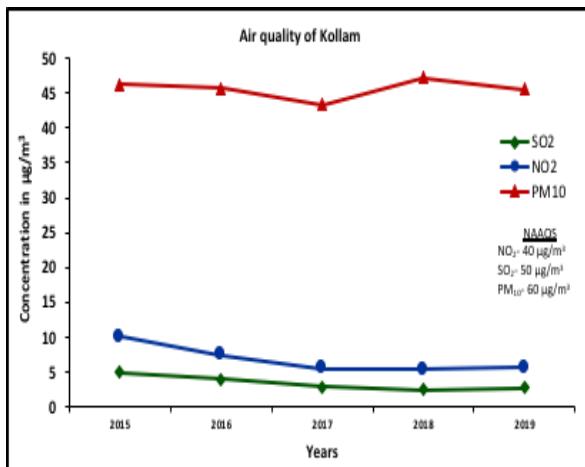


### 7.3.11 KERALA

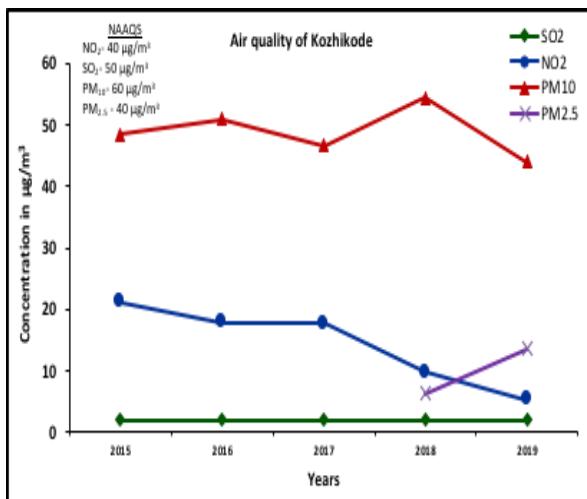
#### Kochi



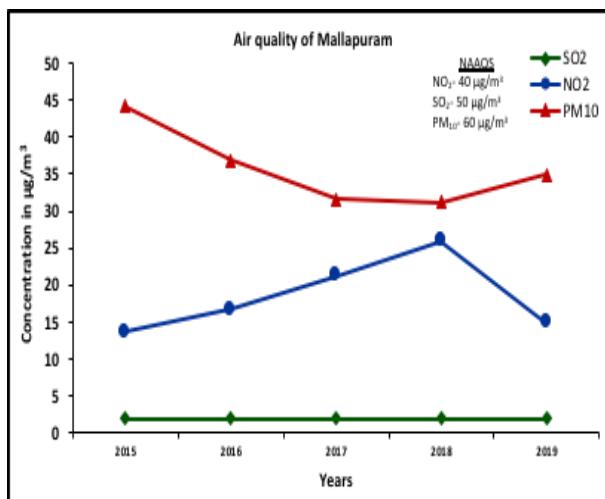
#### Kollam



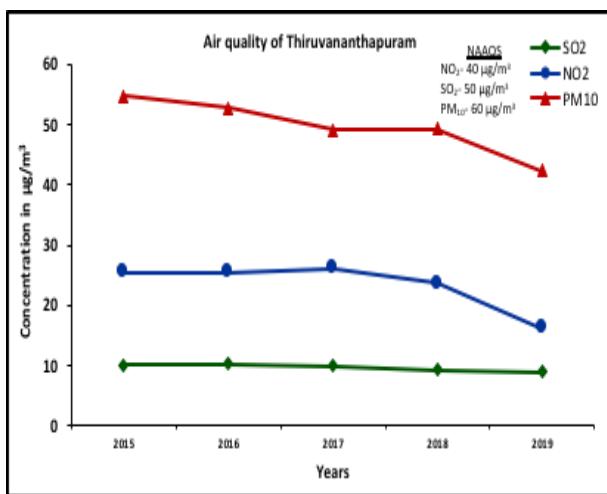
### Kozhikode



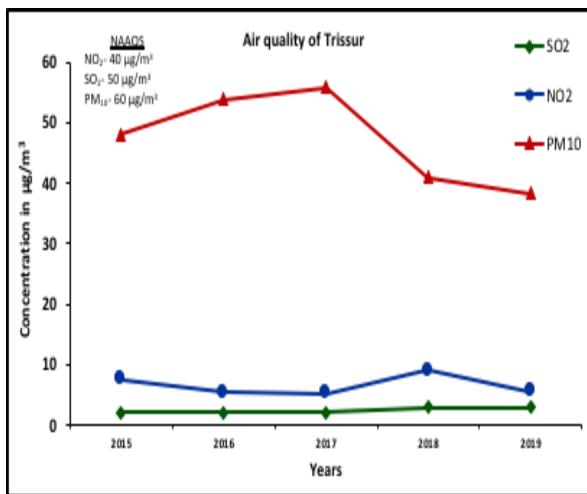
### Mallapuram



### Thiruvananthapuram

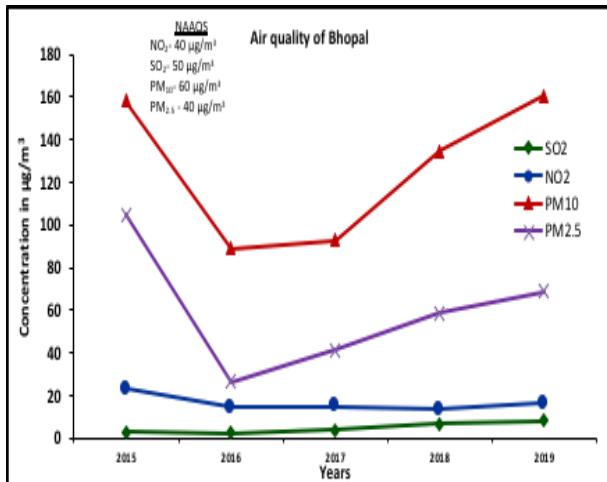


### Trissur

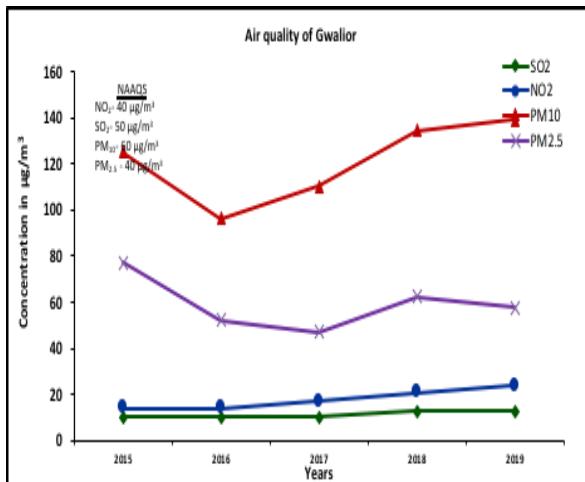


### 7.3.12 MADHYA PRADESH

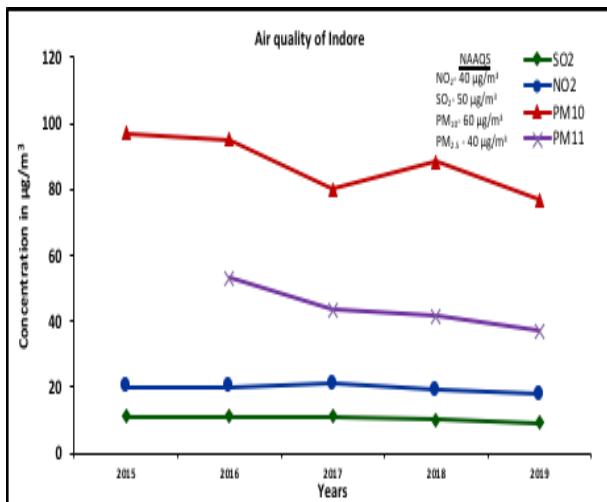
#### Bhopal



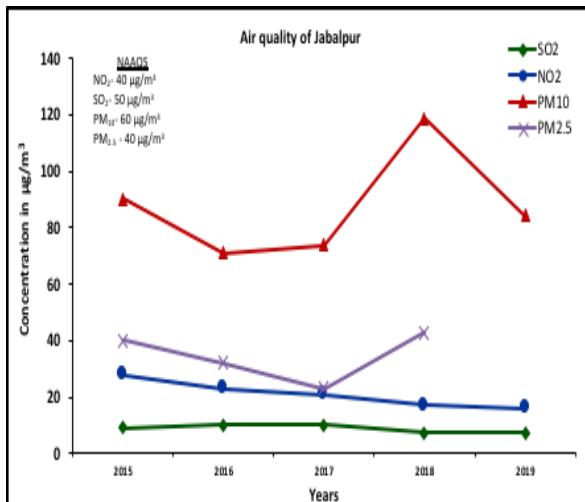
#### Gwalior



#### Indore

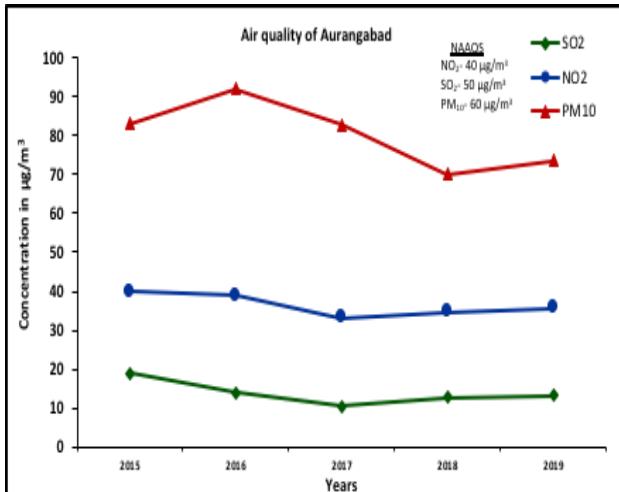


#### Jabalpur

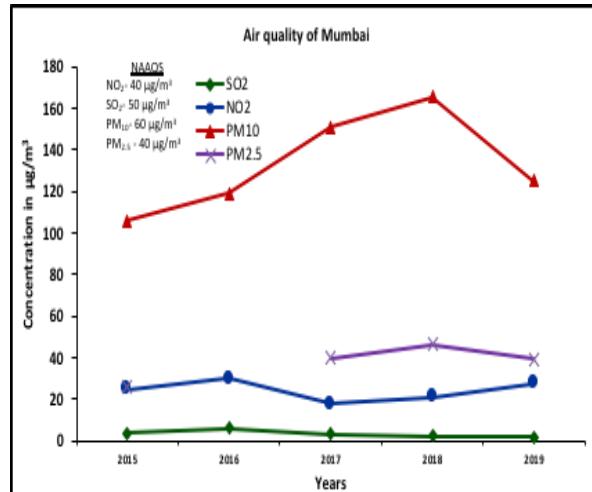


### 7.3.13 MAHARASHTRA

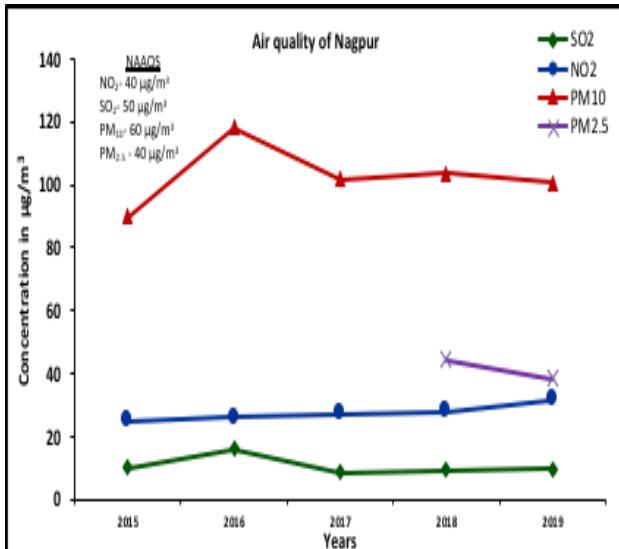
#### Aurangabad



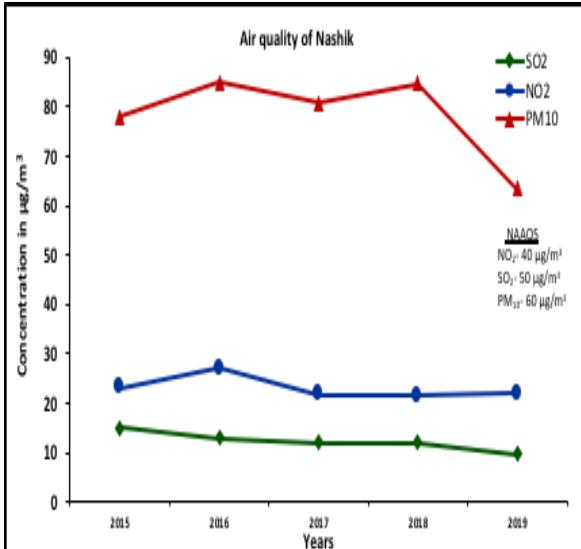
#### Mumbai



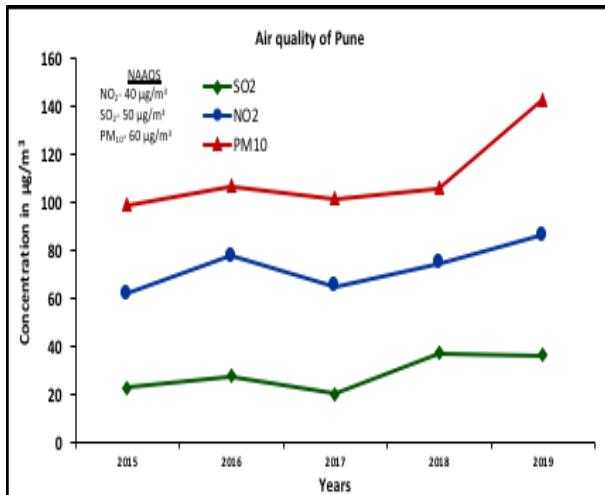
#### Nagpur



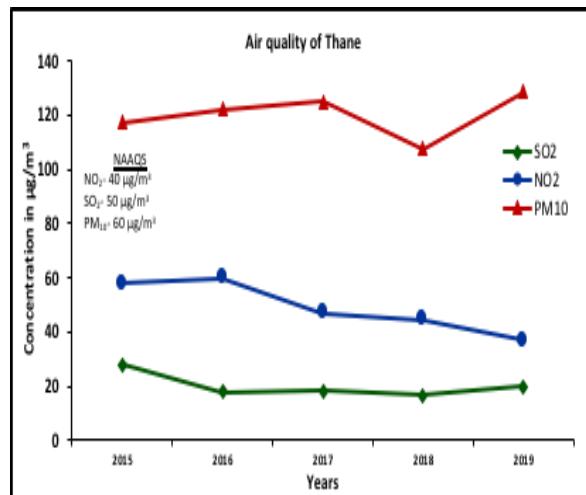
#### Nashik



### Pune

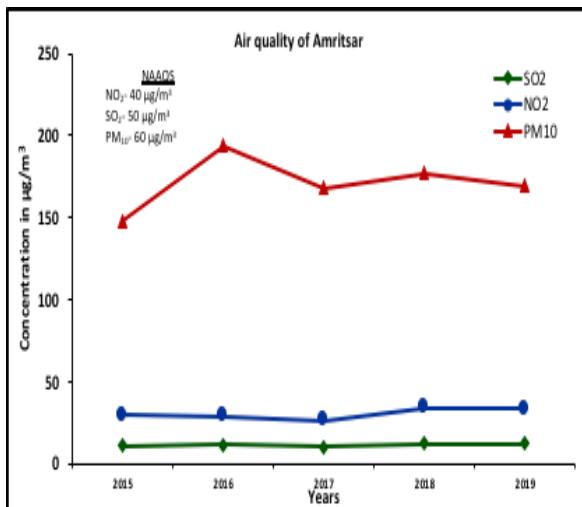


### Thane

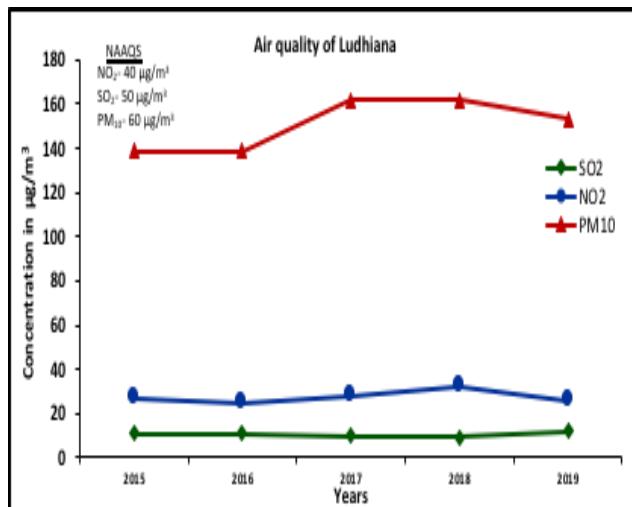


### 7.3.14 PUNJAB

#### Amritsar

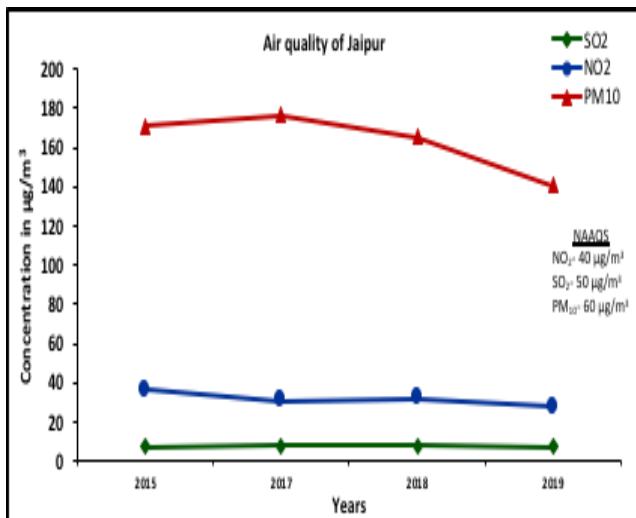


#### Ludhiana

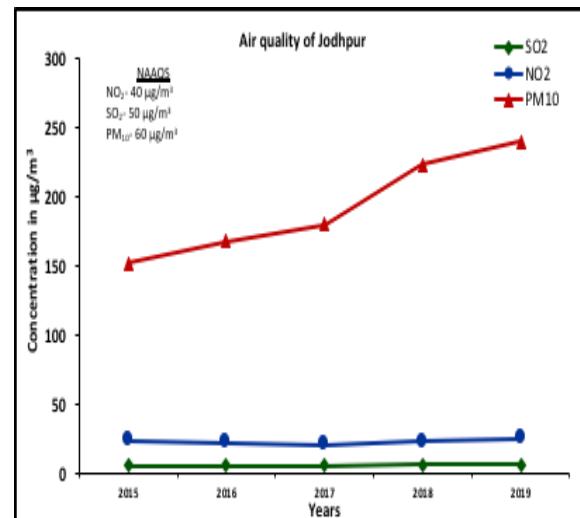


### 7.3.15 RAJASTHAN

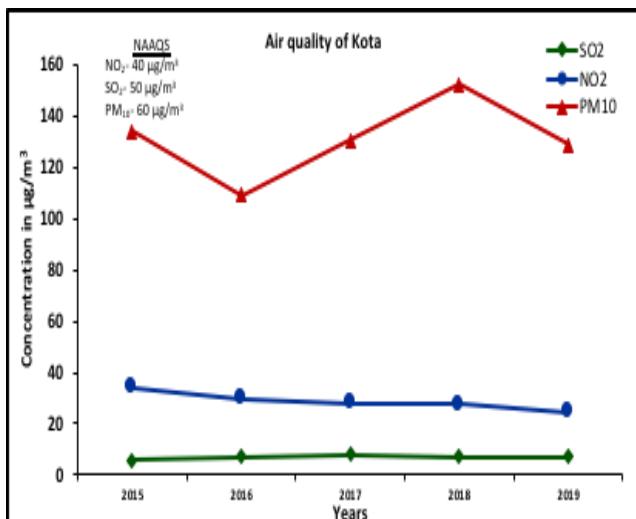
**Jaipur**



**Jodhpur**

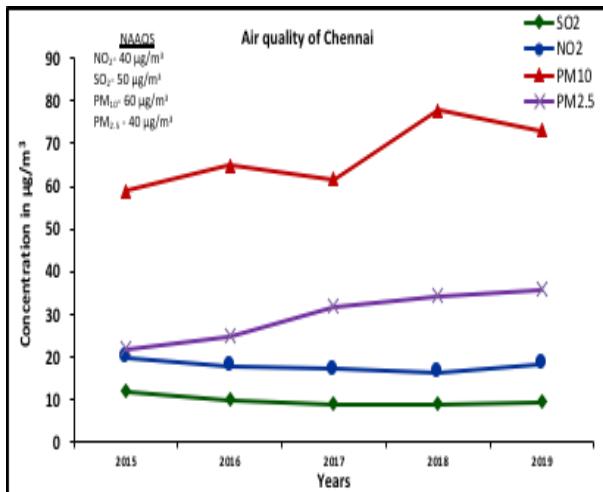


**Kota**

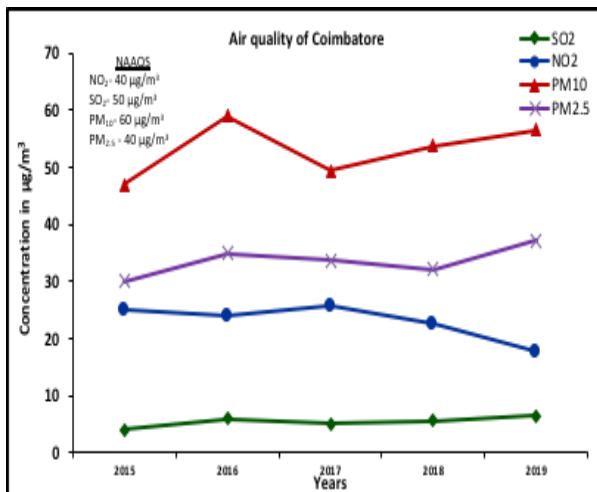


### 7.3.16 TAMILNADU

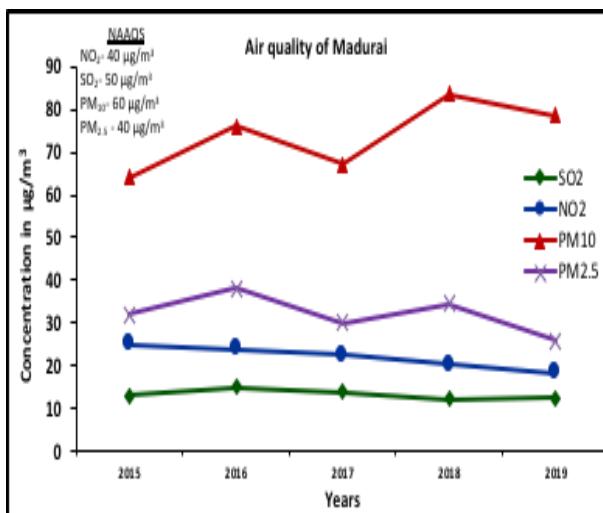
#### Chennai



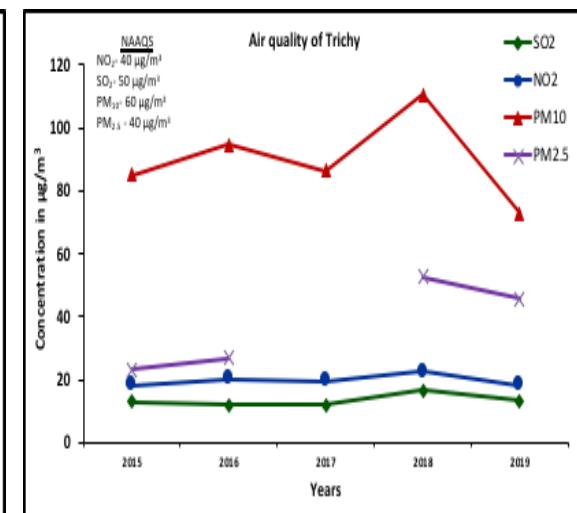
#### Coimbatore



#### Madurai

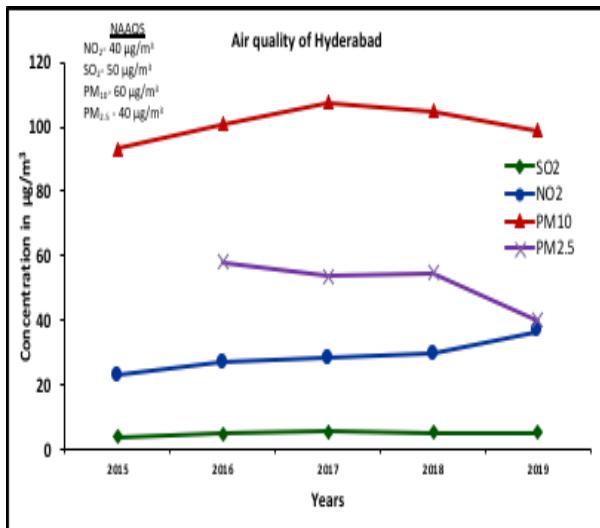


#### Trichy



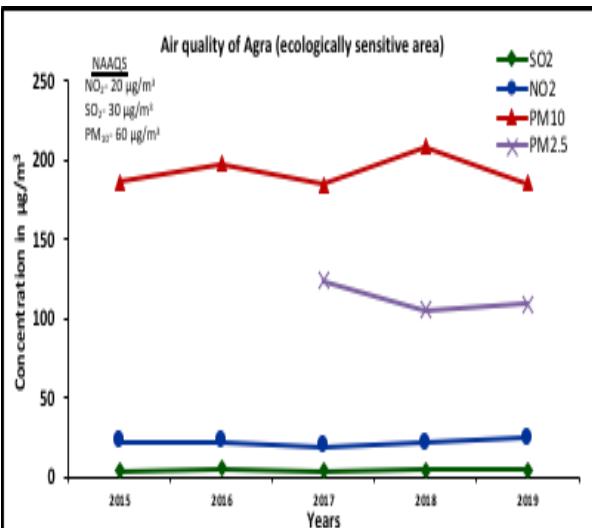
### 7.3.17 TELANGANA

#### Hyderabad

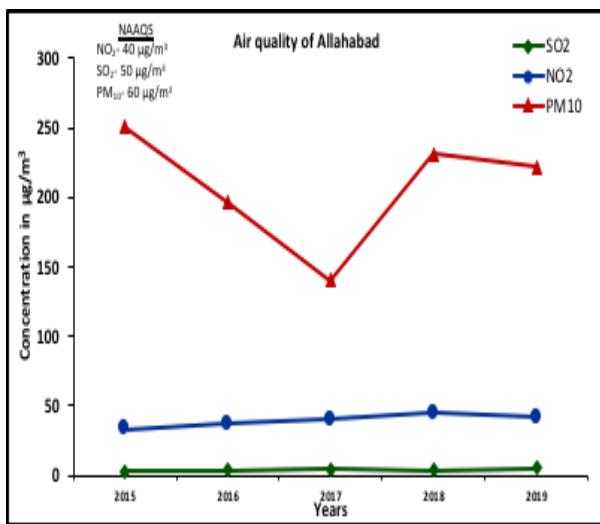


### 7.3.18 UTTAR PRADESH

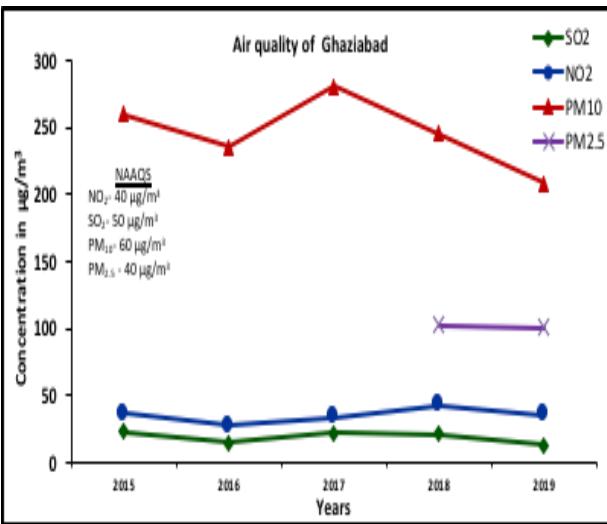
#### Agra



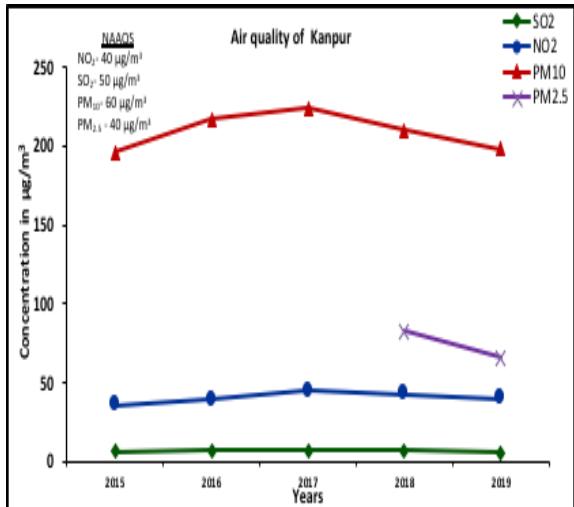
### Allahabad



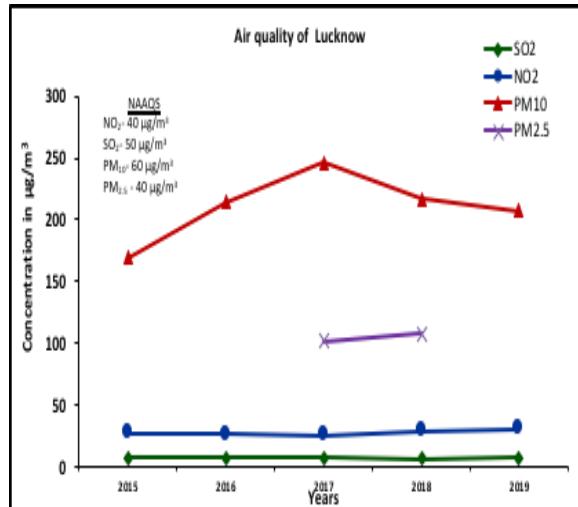
### Ghaziabad



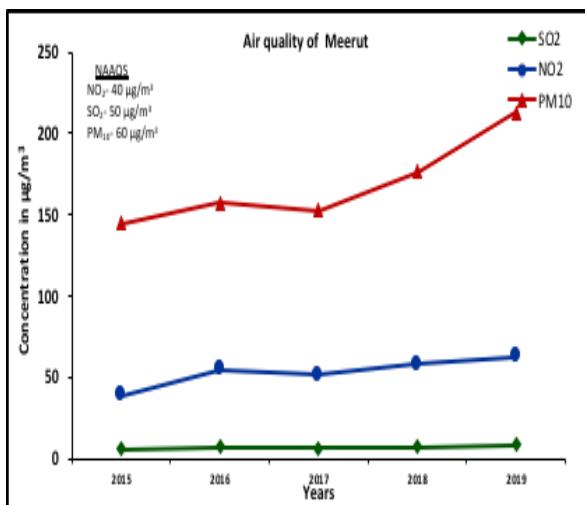
### Kanpur



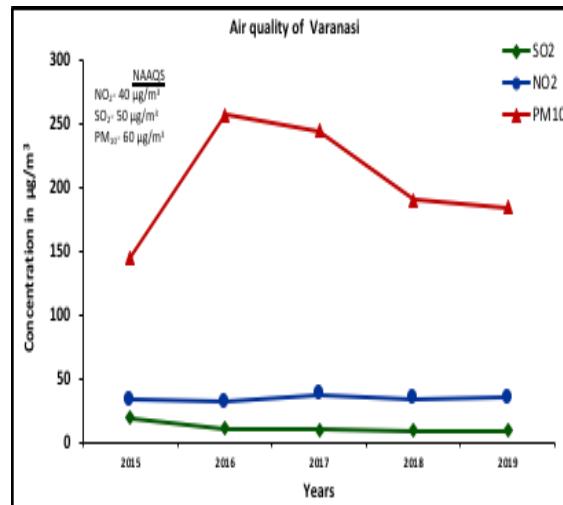
### Lucknow



### Meerut

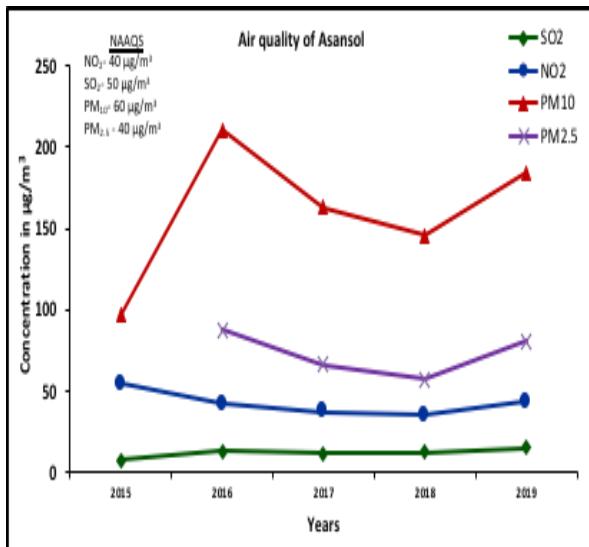


### Varanasi

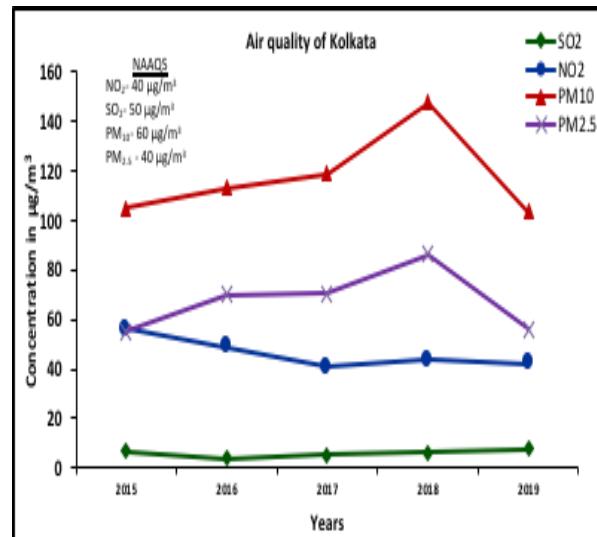


### 7.3.19 WEST BENGAL

#### Asansol



#### Kolkata



## 8.0 Continuous Ambient Air Quality Monitoring

### Introduction:

Air quality is a major concern worldwide. Therefore, the knowledge on instantaneous air quality (real-time) has become a need for the society. This has been possible with the Continuous Ambient Air Quality Monitoring System (CAAQMS) which monitors pollutants using different analyzers and working principles, thereby, generating, transmitting and displaying data within minutes, reducing the chances of manual error. Further, awareness of daily levels of air pollution is important to the citizens, especially for those who suffer from illnesses caused by exposure to air pollution.

Central Pollution Control Board has notified 4th version of National Ambient Air Quality Standards (NAAQS) - 2009 in which 12 set of health based parameters were notified. This necessitated the requirement of monitoring these parameters at National level with the notified methods. Therefore, the present NAAQS required an integrated system of monitoring i.e. it is a combination of Continuous Ambient Air Quality Monitoring System (CAAQMS) and manual monitoring system as the real time system can handle only 08 set of parameters. Since, the inauguration of National Air Quality Index (NAQI) - a tool for effective dissemination of air quality information to the public, by Hon'ble Prime Minister, the necessity of real time data was felt to generate the daily NAQI of cities. The instantaneous data therefore, is more relevant for depicting real-time generic information in the form of National Air Quality Index (AQI).

The CAAQMS network has got paced in the country to generate the real time air quality data, which is not only essential for publishing AQI, but also capable of providing (i) continuous flow of information, (ii) warning at critical period, (iii) trend analysis of any selective interval, (iv) quality data generation with minimizing human error, etc. Therefore, this real-time data displayed at respective locations, not only bring about a participation of general public in the prevention & control of air pollution at respective area of activity but also links with the authorities in respective areas, helping in quick policy decisions and intervention.

### 8.1 Continuous Ambient Air Quality Monitoring System

A Continuous Ambient Air Quality Monitoring System is a specialised system that is housed in a temperature controlled container/room and is equipped for monitoring of ambient air pollutants using different analyzers. The real time data generated through this system is transferred to Central Server and also to digital display board for public viewing. The data of these CAAQMS are being used for generating the daily National Air Quality Index (NAQI) of the cities.



A Continuous Ambient Air Quality Monitoring System is a specialised system equipped for monitoring of ambient air pollutants and transmit the real time data to the Central Server. This data is used for computation of daily National Air Quality Index of the cities.

The pollutants which are measured using this system are:

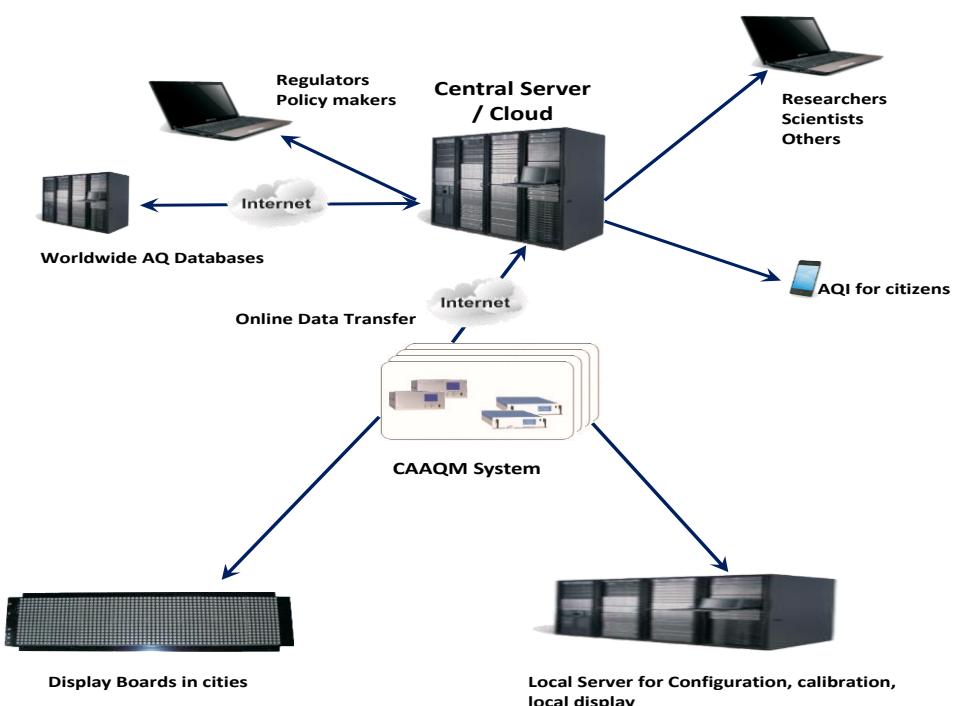
| Pollutant                             | Principle of measurement        |
|---------------------------------------|---------------------------------|
| Particulate Matter, PM <sub>10</sub>  | Beta Attenuation                |
| Particulate Matter, PM <sub>2.5</sub> | Beta Attenuation                |
| Sulphur dioxide, SO <sub>2</sub>      | Ultraviolet Fluorescence        |
| Nitrogen dioxide, NO <sub>2</sub>     | Chemiluminescence               |
| Ammonia, NH <sub>3</sub>              | Chemiluminescence               |
| Carbon Monoxide, CO                   | Non Dispersive Infra-Red - NDIR |
| Ozone, O <sub>3</sub>                 | UV Photometric                  |
| Benzene                               | Gas Chromatography - FID, PID   |



The CAAQM stations are also equipped with sensors to measure meteorological parameters such as Wind Speed, Wind Direction, Ambient Temperature, Relative Humidity, Solar Radiation and Rainfall.

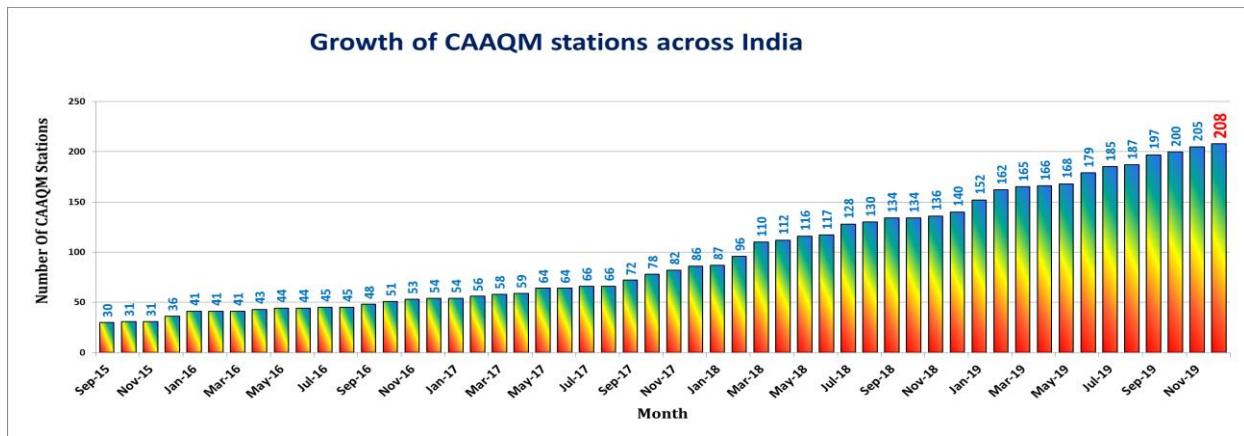
CAAQM stations provide real time data which enables assessment of extent of pollution in real time. The analyser used for measurement are USEPA/TUV/MCERTS certified. For quality data generation, the analyzers are calibrated using certified reference standards (NIST certified Gases/NIST certified Foil Gauges for Particulate Matter). Performance audit of CAAQM stations are carried out once in a year by third party. The CAAQM station operated by CPCB are also under NABL accreditation as per ISO 17025:2005.

Flow diagram of typical data dissemination from CAAQM Station:



## 8.2 Continuous Ambient Air Quality Monitoring Network in India

The network of Continuous Ambient Air Quality Monitoring Stations (CAAQMS) is expanding in the country and at present, 208 CAAQM stations covering 114 cities in 20 states/UTs are existing across the country, depicted as under:



## 8.3 State wise station/location across the country

| S.No. | State          | City              | Station Name                                   | No. of stations |
|-------|----------------|-------------------|--|-----------------|
| 1     | Andhra Pradesh | Amaravati         | Secretariat, Amaravati - APPCB                 | 1               |
|       |                | Rajamahendravaram | Anand Kala Kshetram, Rajamahendravaram - APPCB | 1               |
|       |                | Tirupati          | Tirumala, Tirupati - APPCB                     | 1               |
|       |                | Vijayawada        | PWD Grounds, Vijayawada - APPCB                | 1               |
|       |                | Visakhapatnam     | APIIC Kancharapalem, Visakhapatnam – APPCB     | 2               |
|       |                |                   | GVM Corporation, Visakhapatnam - APPCB         |                 |
| 2     | Assam          | Guwahati          | Railway Colony, Guwahati - APCB                | 1               |
| 3     | Bihar          | Gaya              | Collectorate, Gaya - BSPCB                     | 1               |
|       |                | Muzaffarpur       | Muzaffarpur Collectorate,Muzaffarpur – BSPCB   | 1               |
|       |                | Patna             | IGSC Planetarium Complex, Patna - BSPCB        | 4               |
|       |                |                   | Muradpur, Patna - BSPCB                        |                 |
|       |                |                   | Rajbansi Nagar, Patna - BSPCB                  |                 |
|       |                |                   | Samanpura, Patna - BSPCB                       |                 |
| 4     | Chandigarh     | Chandigarh        | Sector-25, Chandigarh - CPCC                   | 1               |
| 5     | Delhi          | Delhi             | Alipur- DPCC                                   | 38              |
|       |                |                   | Anand Vihar, Delhi - DPCC                      |                 |
|       |                |                   | Ashok Vihar, Delhi - DPCC                      |                 |
|       |                |                   | Aya Nagar, New Delhi - IMD                     |                 |
|       |                |                   | Bawana- DPCC                                   |                 |
|       |                |                   | Burari Crossing, New Delhi - IMD               |                 |
|       |                |                   | CRRI Mathura Road, New Delhi - IMD             |                 |
|       |                |                   | Dr. Karni Singh Shooting Range, Delhi - DPCC   |                 |
|       |                |                   | DTU, New Delhi - CPCB                          |                 |
|       |                |                   | Dwarka-Sector 8, Delhi - DPCC                  |                 |
|       |                |                   | Mundaka-DPCC                                   |                 |
|       |                |                   | IGI Airport Terminal - 3, New Delhi - IMD      |                 |

Chapter 8: Continuous Ambient Air Quality Monitoring

| S.No. | State   | City        | Station Name  | No. of stations |
|-------|---------|-------------|---|-----------------|
|       |         |             | IHBAS, Dilshad Garden, New Delhi - CPCB<br>ITO, New Delhi - CPCB<br>Jahangirpuri, Delhi - DPCC<br>Jawaharlal Nehru Stadium, Delhi - DPCC<br>Lodhi Road, New Delhi - IMD<br>Major Dhyan Chand National Stadium, Delhi - DPCC<br>Mandir Marg, New Delhi - DPCC<br>Najafgarh, Delhi - DPCC<br>Narela, Delhi - DPCC<br>Nehru Nagar, Delhi - DPCC<br>North Campus, DU, New Delhi - IMD<br>NSIT Dwarka, New Delhi - CPCB<br>Okhla Phase-2, Delhi - DPCC<br>Patparganj, Delhi - DPCC<br>Punjabi Bagh, Delhi - DPCC<br>Pitampura Delhi- IMD<br>Pusa, New Delhi – DPCC<br>Pusa, New Delhi - IMD<br>R K Puram, New Delhi - DPCC<br>Rohini, Delhi - DPCC<br>Shadipur, New Delhi - CPCB<br>Sirifort, New Delhi - CPCB<br>Sonia Vihar, Delhi - DPCC<br>Sri Aurobindo Marg- DPCC<br>Vivek Vihar, Delhi - DPCC<br>Wazirpur, Delhi - DPCC |                 |
| 6     | Gujarat | Ahmedabad   | Maninagar, Ahmedabad - GPCB   | 1               |
|       |         | Ankleshwar  | GIDC, Ankleshwar - GPCB   | 1               |
|       |         | Gandhinagar | Sector-10, Gandhinagar - GPCB   | 1               |
|       |         | Vapi        | Phase-1 GIDC, Vapi - GPCB   | 1               |
|       |         | Vatva       | Phase-4 GIDC, Vatva - GPCB  | 1               |
| 7     | Haryana | Ambala      | Patti Mehar, Ambala - HSPCB   | 1               |
|       |         | Bahadurgarh | Arya Nagar, Bahadurgarh - HSPCB   | 1               |
|       |         | Ballabgarh  | Nathu Colony, Ballabgarh - HSPCB  | 1               |
|       |         | Bhiwani     | H.B. Colony, Bhiwani - HSPCB  | 1               |
|       |         | Dharuhera   | Municipal Corporation Office, Dharuhera - HSPCB   | 1               |
|       |         | Faridabad   | Sector- 16A, Faridabad - HSPCB  | 1               |
|       |         | Fatehabad   | Huda Sector, Fatehabad - HSPCB  | 1               |
|       |         | Gurugram    | NISE Gwal Pahari, Gurugram - IMD  | 2               |
|       |         |             | Vikas Sadan, Gurugram - HSPCB   |                 |
|       |         | Hisar       | Urban Estate-II, Hisar - HSPCB  | 1               |
|       |         | Jind        | Police Lines, Jind - HSPCB  | 1               |
|       |         | Kaithal     | Rishi Nagar, Kaithal - HSPCB  | 1               |
|       |         | Karnal      | Sector-12, Karnal - HSPCB   | 1               |
|       |         | Kurukshetra | Sector-7, Kurukshetra - HSPCB   | 1               |

Chapter 8: Continuous Ambient Air Quality Monitoring

| S.No. | State          | City               | Station Name                                | No. of stations |
|-------|----------------|--------------------|---|-----------------|
|       |                | Mandikhera         | General Hospital, Mandikhera - HSPCB        | 1               |
|       |                | Manesar            | Sector-2 IMT, Manesar - HSPCB               | 1               |
|       |                | Narnaul            | Shastri Nagar, Narnaul - HSPCB              | 1               |
|       |                | Palwal             | Shyam Nagar, Palwal - HSPCB                 | 1               |
|       |                | Panchkula          | Sector-6, Panchkula - HSPCB                 | 1               |
|       |                | Panipat            | Sector-18, Panipat - HSPCB                  | 1               |
|       |                | Rohtak             | MD University, Rohtak - HSPCB               | 1               |
|       |                | Sirsa              | F-Block, Sirsa - HSPCB                      | 1               |
|       |                | Sonipat            | Murthal, Sonipat - HSPCB                    | 1               |
|       |                | Yamuna Nagar       | Gobind Pura, Yamuna Nagar - HSPCB           | 1               |
| 8     | Jharkhand      | Jorapokhar         | Tata Stadium, Jorapokhar - JSPCB            | 1               |
| 9     | Karnataka      | Bengaluru          | BTM Layout, Bengaluru - CPCB                | 10              |
|       |                |                    | BWSSB Kadabesanhalli, Bengaluru - CPCB      |                 |
|       |                |                    | Bapuji Nagar, Bengaluru - KSPCB             |                 |
|       |                |                    | City Railway Station, Bengaluru - KSPCB     |                 |
|       |                |                    | Hebbal, Bengaluru - KSPCB                   |                 |
|       |                |                    | Hombegowda Nagar, Bengaluru - KSPCB         |                 |
|       |                |                    | Jayanagar 5th Block, Bengaluru - KSPCB      |                 |
|       |                |                    | Peenya, Bengaluru - CPCB                    |                 |
|       |                |                    | Sanegurava Halli, Bengaluru - KSPCB         |                 |
|       |                |                    | Silk Board, Bengaluru - KSPCB               |                 |
|       |                | Chamarajanagar     | Urban, Chamarajanagar – KSPCB               | 1               |
|       |                | Chikkaballapur     | Chikkaballapur Rural- KSPCB                 | 1               |
|       |                | Hubballi           | Deshpande Nagar, Hubballi - KSPCB           | 1               |
|       |                | Kalaburagi         | Lal Bahadur Shastri Nagar- KSPCB            | 1               |
|       |                | Mysuru             | Hebbal 1st Stage, Mysuru - KSPCB            | 1               |
|       |                | Ramanagara         | Vijay Nagar, Ramanagara - KSPCB             | 1               |
|       |                | Yadgir             | Collector Office, Yadgir - KSPCB            | 1               |
| 10    | Kerala         | Eloor              | Udyogamandal, Eloor - Kerala PCB            | 1               |
|       |                | Thiruvananthapuram | Plamoodu, Thiruvananthapuram - Kerala PCB   | 1               |
| 11    | Madhya Pradesh | Bhopal             | T T Nagar, Bhopal - MPPCB                   | 1               |
|       |                | Damoh              | Shrivastav Colony, Damoh - MPPCB            | 1               |
|       |                | Dewas              | Bhopal Chauraha, Dewas - MPPCB              | 1               |
|       |                | Maihar             | Sahilara, Maihar - KJS Cements              | 1               |
|       |                | Indore             | Chhoti Gwaltoli, Indore - MPPCB             | 1               |
|       |                | Jabalpur           | Marhatal, Jabalpur - MPPCB                  | 1               |
|       |                | Katni              | Gole Bazar, Katni - MPPCB                   | 1               |
|       |                | Mandideep          | Sector-D Industrial Area, Mandideep - MPPCB | 1               |
|       |                | Pithampur          | Sector-2 Industrial Area, Pithampur - MPPCB | 1               |
|       |                | Ratlam             | Shastri Nagar, Ratlam - IPCA Lab            | 1               |
|       |                | Satna              | Bandhavgar Colony, Satna - MPPCB            | 1               |
|       |                | Singrauli          | Vindhyachal STPS, Singrauli - MPPCB         | 1               |
|       |                | Ujjain             | Mahakaleshwar Temple, Ujjain - MPPCB        | 1               |
| 12    | Maharashtra    | Aurangabad         | More Chowk Waluj, Aurangabad - MPCB         | 1               |
|       |                | Chandrapur         | Chandrapur, Chandrapur - MPCB               | 2               |
|       |                |                    | MIDC Khutala, Chandrapur - MPCB             |                 |
|       |                | Kalyan             | Khadakpada, Kalyan - MPCB                   | 1               |
|       |                | Mumbai             | Bandra, Mumbai - MPCB                       | 1               |

## Chapter 8: Continuous Ambient Air Quality Monitoring

| S.No. | State      | City             | Station Name  | No. of stations |
|-------|------------|------------------|---|-----------------|
| 12    |            |                  | Borivali East, Mumbai - MPCB                          | 1               |
|       |            |                  | Chhatrapati Shivaji Intl. Airport (T2), Mumbai - MPCB | 1               |
|       |            |                  | Colaba, Mumbai - MPCB                                 | 1               |
|       |            |                  | Kurla, Mumbai - MPCB                                  | 1               |
|       |            |                  | Powai, Mumbai - MPCB                                  | 1               |
|       |            |                  | Sion, Mumbai - MPCB                                   | 1               |
|       |            |                  | Vasai West, Mumbai – MPCB                             | 1               |
|       |            |                  | Vile Parle West, Mumbai – MPCB                        | 1               |
|       |            |                  | Worli, Mumbai - MPCB                                  | 1               |
|       |            | Nagpur           | Opp GPO Civil Lines, Nagpur - MPCB                    | 1               |
|       |            | Nashik           | Gangapur Road, Nashik - MPCB                          | 1               |
|       |            | Navi Mumbai      | Airoli, Navi Mumbai - MPCB                            | 1               |
|       |            |                  | Mahape, Navi Mumbai - MPCB                            | 1               |
|       |            |                  | Nerul, Navi Mumbai - MPCB                             | 1               |
|       |            | Pune             | Karve Road, Pune - MPCB                               | 1               |
|       |            | Solapur          | Solapur, Solapur - MPCB                               | 1               |
|       |            | Thane            | Pimpleshwar Mandir, Thane - MPCB                      | 1               |
| 13    | Meghalaya  | Shillong         | Lumpyngngad, Shillong - Meghalaya PCB                 | 1               |
| 14    | Odisha     | Brajrajnagar     | GM Office, Brajrajnagar - OSPCB                       | 1               |
|       |            | Talcher          | Talcher Coalfields, Talcher - OSPCB                   | 1               |
| 15    | Punjab     | Amritsar         | Golden Temple, Amritsar - PPCB                        | 1               |
|       |            | Bathinda         | Hardev Nagar, Bathinda - PPCB                         | 1               |
|       |            | Jalandhar        | Civil Line, Jalandhar - PPCB                          | 1               |
|       |            | Khanna           | Kalal Majra, Khanna - PPCB                            | 1               |
|       |            | Ludhiana         | Punjab Agricultural University, Ludhiana - PPCB       | 1               |
|       |            | Mandi Gobindgarh | RIMT University, Mandi Gobindgarh - PPCB              | 1               |
|       |            | Patiala          | Model Town, Patiala - PPCB                            | 1               |
|       |            | Rupnagar         | Ratanpura, Rupnagar - PPCB                            | 1               |
| 16    | Rajasthan  | Alwar            | Moti Doongri, Alwar, Rajasthan - RSPCB                | 1               |
|       |            | Ajmer            | Civil Lines, Ajmer - RSPCB                            | 1               |
|       |            | Bhiwadi          | RIICO Ind. Area III, Bhiwadi, Rajasthan - RSPCB       | 1               |
|       |            | Jaipur           | Adarsh Nagar, Jaipur - RSPCB                          | 3               |
|       |            |                  | Police Commissionerate, Jaipur - RSPCB                |                 |
|       |            |                  | Shastri Nagar, Jaipur - RSPCB                         |                 |
|       |            | Jodhpur          | Collectorate, Jodhpur - RSPCB                         | 1               |
|       |            | Kota             | Shrinath Puram, Kota - RSPCB                          | 1               |
|       |            | Pali             | Indira Colony Vistar, Pali - RSPCB                    | 1               |
|       |            | Udaipur          | Ashok Nagar, Udaipur - RSPCB                          | 1               |
| 17    | Tamil Nadu | Chennai          | Alandur Bus Depot, Chennai - CPCB                     | 4               |
|       |            |                  | Manali Village, Chennai - TNPCB                       |                 |
|       |            |                  | Manali, Chennai - CPCB                                |                 |
|       |            |                  | Velachery Res. Area, Chennai - CPCB                   |                 |
|       |            | Coimbatore       | SIDCO Kurichi, Coimbatore - TNPCB                     | 1               |
| 18    | Telangana  | Hyderabad        | Bollaram Industrial Area, Hyderabad - TSPCB           | 6               |
|       |            |                  | Central University, Hyderabad - TSPCB                 |                 |
|       |            |                  | ICRISAT Patancheru, Hyderabad - TSPCB                 |                 |
|       |            |                  | IDA Pashamylaram, Hyderabad - TSPCB                   |                 |
|       |            |                  | Sanathnagar, Hyderabad - TSPCB                        |                 |

## Chapter 8: Continuous Ambient Air Quality Monitoring

| S.No. | State         | City          | Station Name   | No. of stations |
|-------|---------------|---------------|--|-----------------|
| 19    | Uttar Pradesh |               | Zoo Park, Hyderabad - TSPCB                          |                 |
|       |               | Agra          | Sanjay Palace, Agra - UPPCB                          | 1               |
|       |               | Baghpat       | New Collectorate- UPPCB                              | 1               |
|       |               | Bulandshahr   | Yamunapuram, Bulandshahr - UPPCB                     | 1               |
|       |               | Ghaziabad     | Indirapuram, Ghaziabad - UPPCB                       |                 |
|       |               |               | Loni, Ghaziabad - UPPCB                              | 4               |
|       |               |               | Sanjay Nagar, Ghaziabad - UPPCB                      |                 |
|       |               |               | Vasundhara, Ghaziabad - UPPCB                        |                 |
|       |               | Greater Noida | Knowledge Park - III, Greater Noida - UPPCB          | 1               |
|       |               |               | Knowledge Park - V, Greater Noida - UPPCB            | 1               |
|       |               | Hapur         | Anand Vihar, Hapur -UPPCB                            | 1               |
|       |               | Kanpur        | Nehru Nagar, Kanpur - UPPCB                          | 1               |
|       |               | Lucknow       | Central School, Lucknow - CPCB                       |                 |
|       |               |               | Gomti Nagar, Lucknow - UPPCB                         | 5               |
|       |               |               | Lalbagh, Lucknow - CPCB                              |                 |
|       |               |               | Nishant Ganj, Lucknow – UPPCB                        |                 |
|       |               |               | Talkatora District Industries Center, Lucknow - CPCB |                 |
|       |               | Meerut        | Ganga Nagar, Meerut - UPPCB                          |                 |
|       |               |               | Jai Bhim Nagar, Meerut - UPPCB                       | 3               |
|       |               |               | Pallavpuram Phase 2, Meerut - UPPCB                  |                 |
|       |               | Moradabad     | Lajpat Nagar, Moradabad - UPPCB                      | 1               |
|       |               | Muzaffarnagar | New Mandi, Muzaffarnagar - UPPCB                     | 1               |
|       |               | Noida         | Sector - 125, Noida - UPPCB                          |                 |
|       |               |               | Sector - 62, Noida - IMD                             | 4               |
|       |               |               | Sector-1, Noida - UPPCB                              |                 |
|       |               |               | Sector-116, Noida - UPPCB                            |                 |
|       |               | Varanasi      | Ardhali Bazar, Varanasi - UPPCB                      | 1               |
| 20    | West Bengal   | Asanol        | Asanol Court Area, Asanol - WBPCB                    | 1               |
|       |               | Durgapur      | Sidhu Kanhu Indoor Stadium, Durgapur – WBPCB         | 1               |
|       |               | Haldia        | Haldia, Haldia - WBPCB                               | 1               |
|       |               | Howrah        | Belur Math, Howrah - WBPCB                           |                 |
|       |               |               | Ghusuri, Howrah - WBPCB                              | 3               |
|       |               |               | Padmapukur, Howrah - WBPCB                           |                 |
|       |               | Kolkata       | Ballygunge, Kolkata - WBPCB                          |                 |
|       |               |               | Bidhannagar, Kolkata - WBPCB                         | 7               |
|       |               |               | Fort William, Kolkata - WBPCB                        |                 |
|       |               |               | Jadavpur, Kolkata - WBPCB                            |                 |
|       |               |               | Rabindra Bharati University, Kolkata - WBPCB         |                 |
|       |               |               | Rabindra Sarobar, Kolkata - WBPCB                    |                 |
|       |               |               | Victoria, Kolkata - WBPCB                            |                 |
|       |               | Siliguri      | Ward-32 Bapupara, Siliguri - WBPCB                   | 1               |
| Total | 20            | 114           | 208  |                 |

#### 8.4 Continuous Ambient Air Quality Monitoring Network in Delhi-NCR region

There are 73 CAAQM stations (year 2019), installed in Delhi-NCR presented in tables below:

| S. No.              | Station Name                              | Operating Agency-No. of Stations |
|---------------------|---|----------------------------------|
| <b>State: DELHI</b> |   |                                  |
| 1.                  | DTU, New Delhi                            |                                  |
| 2.                  | ITO, New Delhi                            |                                  |
| 3.                  | IHBAS, DilshadGarden,New Delhi            |                                  |
| 4.                  | NSIT Dwarka, New Delhi                    |                                  |
| 5.                  | Shadipur, New Delhi                       |                                  |
| 6.                  | Sirifort, New Delhi                       |                                  |
| 7.                  | Alipur                                    |                                  |
| 8.                  | AnandVihar, Delhi                         |                                  |
| 9.                  | Ashok Vihar, Delhi                        |                                  |
| 10.                 | Bawana                                    |                                  |
| 11.                 | Dr. Karni Singh Shooting Range, Delhi     |                                  |
| 12.                 | Dwarka-Sector 8, Delhi                    |                                  |
| 13.                 | Mundaka                                   |                                  |
| 14.                 | Jahangirpuri, Delhi                       |                                  |
| 15.                 | Jawaharlal Nehru Stadium, Delhi           |                                  |
| 16.                 | Major Dhyan Chand National Stadium, Delhi |                                  |
| 17.                 | MandirMarg, New Delhi                     |                                  |
| 18.                 | Najafgarh, Delhi                          |                                  |
| 19.                 | Narela, Delhi                             |                                  |
| 20.                 | Nehru Nagar, Delhi                        |                                  |
| 21.                 | Okhla Phase-2, Delhi                      |                                  |
| 22.                 | Patparganj, Delhi                         |                                  |
| 23.                 | Punjabi Bagh, Delhi                       |                                  |
| 24.                 | Pusa, DPCC Delhi                          |                                  |
| 25.                 | R K Puram, New Delhi                      |                                  |
| 26.                 | Rohini, Delhi                             |                                  |
| 27.                 | Sonia Vihar, Delhi                        |                                  |
| 28.                 | Sri AurobindoMarg                         |                                  |
| 29.                 | VivekVihar, Delhi                         |                                  |
| 30.                 | Wazirpur, Delhi                           |                                  |
| 31.                 | Aya Nagar, New Delhi                      |                                  |
| 32.                 | Burari Crossing, New Delhi                |                                  |
| 33.                 | CRRI Mathura Road, New Delhi              |                                  |
| 34.                 | IGI Airport Terminal - 3, New Delhi       |                                  |
| 35.                 | Lodhi Road, New Delhi                     |                                  |
| 36.                 | North Campus, DU, New Delhi               |                                  |
| 37.                 | Pusa, New Delhi                           |                                  |
| 38.                 | Pitampura, New Delhi                      |                                  |
|                     | <b>Total Stations</b>                     | <b>38</b>                        |

| S. No.                      | City                  | Location                     | Operating Agency-No. of Stations |
|-----------------------------|-----------------------|------------------------------|----------------------------------|
| <b>State: Haryana</b>       |                       |                              |                                  |
| 39.                         | Bahadurgarh           | Arya Nagar                   | HSPCB-15                         |
| 40.                         | Ballabgarh            | Nathu Colony                 |                                  |
| 41.                         | Bhiwani               | H.B. Colony                  |                                  |
| 42.                         | Dharuhera             | Municipal Corporation Office |                                  |
| 43.                         | Faridabad             | Sector- 16A                  |                                  |
| 44.                         | Jind                  | Police Lines                 |                                  |
| 45.                         | Karnal                | Sector-12                    |                                  |
| 46.                         | Mandikheda            | Sector-7                     |                                  |
| 47.                         | Manesar               | Sector-2 IMT                 |                                  |
| 48.                         | Narnaul               | Shastri Nagar                |                                  |
| 49.                         | Palwal                | Shyam Nagar                  |                                  |
| 50.                         | Panipat               | Sector-18                    |                                  |
| 51.                         | Rohtak                | MD University                |                                  |
| 52.                         | Sonipat               | Murthal                      |                                  |
| 53.                         | Gurugram              | Vikas Sadan                  | IMD-01                           |
| 54.                         |                       | NISE Gwal Pahari             |                                  |
|                             | <b>Total Stations</b> |                              | <b>16</b>                        |
| <b>State: Uttar Pradesh</b> |                       |                              |                                  |
| 55.                         | Baghpat               | New Collectorate             | UPPCB-16                         |
| 56.                         | Bulandsahar           | Yammunapuram                 |                                  |
| 57.                         | Ghaziabad             | Indirapuram                  |                                  |
| 58.                         |                       | Loni                         |                                  |
| 59.                         |                       | Sanjay Nagar                 |                                  |
| 60.                         |                       | Vasundhara,                  |                                  |
| 61.                         | Greater Noida         | Knowledge Park-III           |                                  |
| 62.                         |                       | KnowledgePark V              |                                  |
| 63.                         | Hapur                 | Anand Vihar                  |                                  |
| 64.                         |                       | Ganga Nagar                  |                                  |
| 65.                         | Meerut                | Jai Bhim Nagar               |                                  |
| 66.                         |                       | Pallavpuram Phase 2          |                                  |
| 67.                         | Muzzafar Nagar        | New Mandi                    | IMD-01                           |
| 68.                         | Noida                 | Noida-Sec 125                |                                  |
| 69.                         |                       | Noida- Sec 1                 |                                  |
| 70.                         |                       | Noida-Sec 116                |                                  |
| 71.                         |                       | Noida-62                     |                                  |
|                             | <b>Total Stations</b> |                              | <b>17</b>                        |
| <b>State: Rajasthan</b>     |                       |                              |                                  |
| 72.                         | Alwar                 | MotiDoongri                  | RSPCB-02                         |
| 73.                         | Bhiwadi               | RIICO Industrial Area-III    |                                  |
|                             | <b>Total Stations</b> |                              | <b>02</b>                        |

## 8.5 National Air Quality Index

National Air Quality Index (NAQI) was launched by Hon'ble Prime Minister on 6th April, 2015 with the objective for dissemination of Air Quality information to the public. Computation of AQI is done using real-time data of Continuous Ambient Air Quality Monitoring Stations. This index will help the people to 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 114 cities in 20 States/UTs of India. Total 208 Continuous Ambient Air Quality Monitoring Stations all over the country are connected with NAQI.

The AQI consider eight pollutants ( $\text{PM}_{10}$ ,  $\text{PM}_{2.5}$ ,  $\text{NO}_2$ ,  $\text{SO}_2$ , CO,  $\text{O}_3$ ,  $\text{NH}_3$ , and Pb), it is calculated only if data are available for minimum three pollutants out of which one should necessarily be either  $\text{PM}_{2.5}$  or  $\text{PM}_{10}$ . There are six AQI categories namely, Good, Satisfactory, Moderate, Poor, Very Poor, and Severe. The AQI values and corresponding ambient concentrations (health breakpoints) as well as associated likely health impacts are as follows:

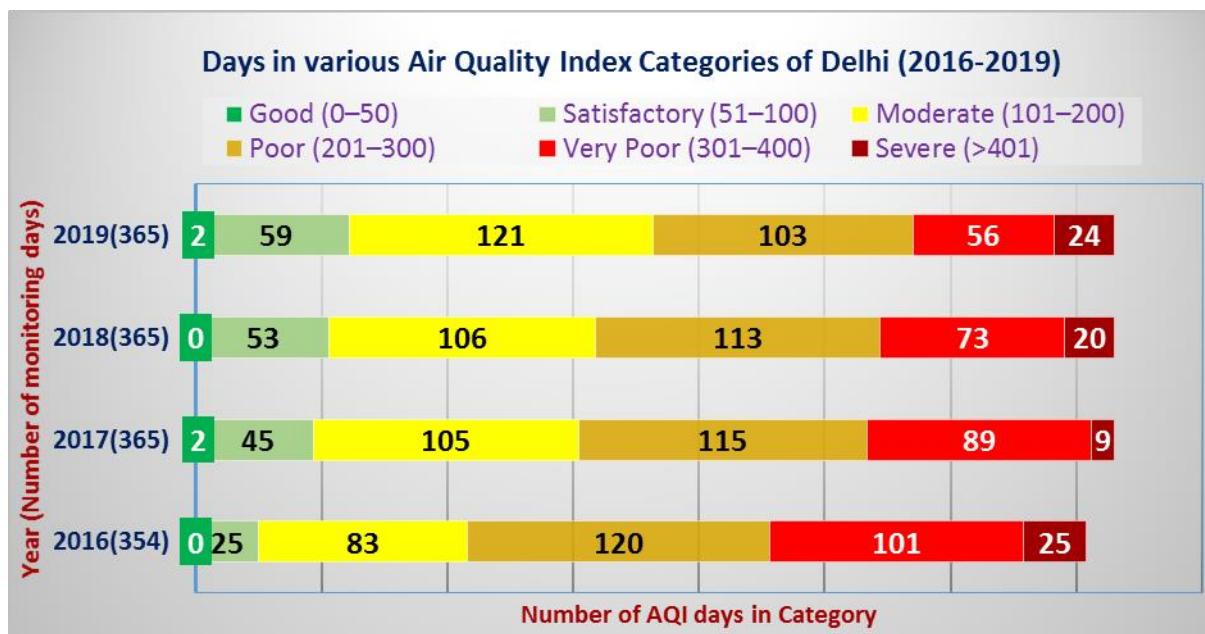
| AQI Category, Pollutants and Health Breakpoints |                        |                         |                     |                   |                              |                     |                     |          |
|---|------------------------|-------------------------|---------------------|-------------------|------------------------------|---------------------|---------------------|----------|
| AQI Category (Range)                            | $\text{PM}_{10}$ 24-hr | $\text{PM}_{2.5}$ 24-hr | $\text{NO}_2$ 24-hr | $\text{O}_3$ 8-hr | CO 8-hr (mg/m <sup>3</sup> ) | $\text{SO}_2$ 24-hr | $\text{NH}_3$ 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 |

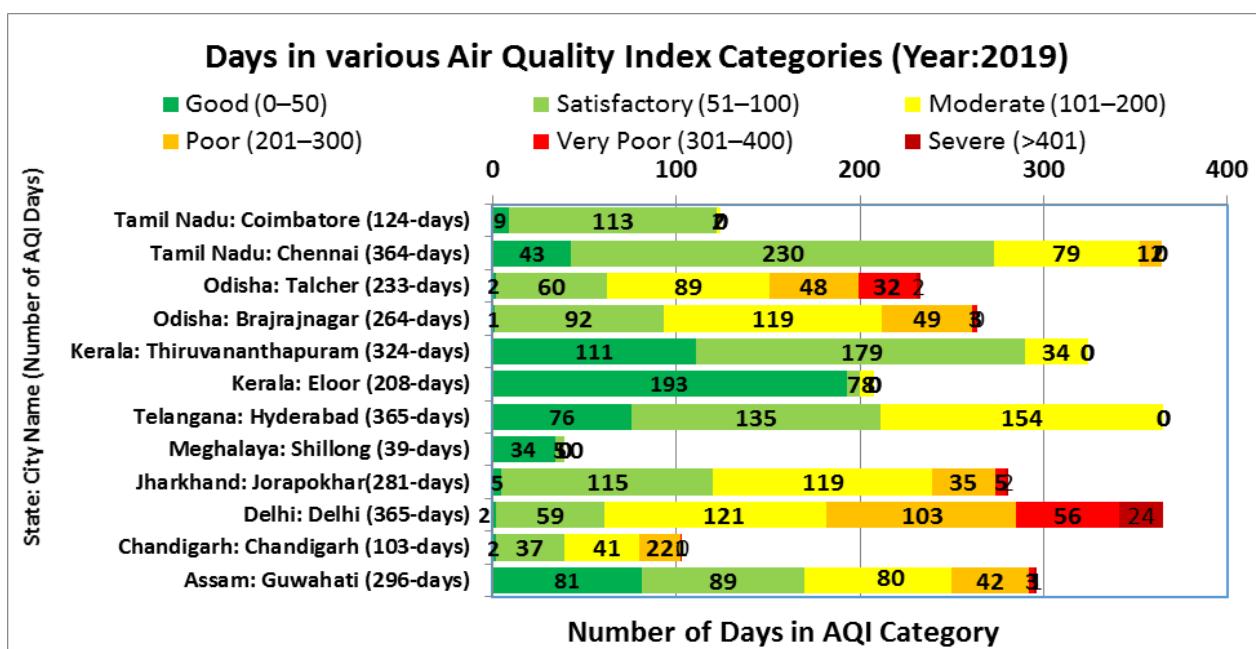
## 8.6 Air Quality Index of Delhi

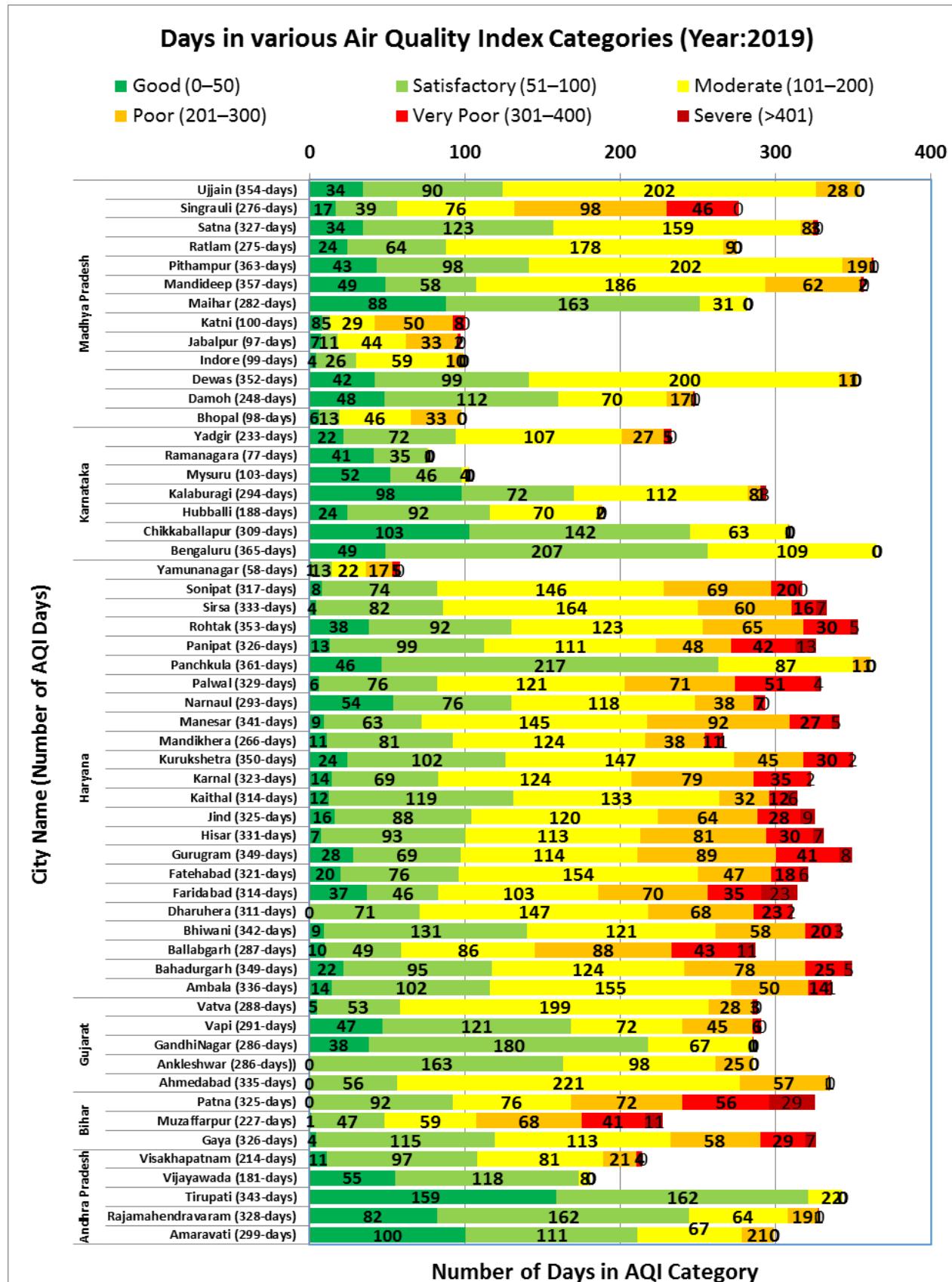
Air Quality Index of Delhi from year 2016 to 2019 is presented in the following figure. Number of days in each category for particular year is depicted in the chart. The chart shows that all Good/Satisfactory/Moderate days have increased significantly and Poor/Very Poor/Severe days in total have gone down as compared to year 2018.

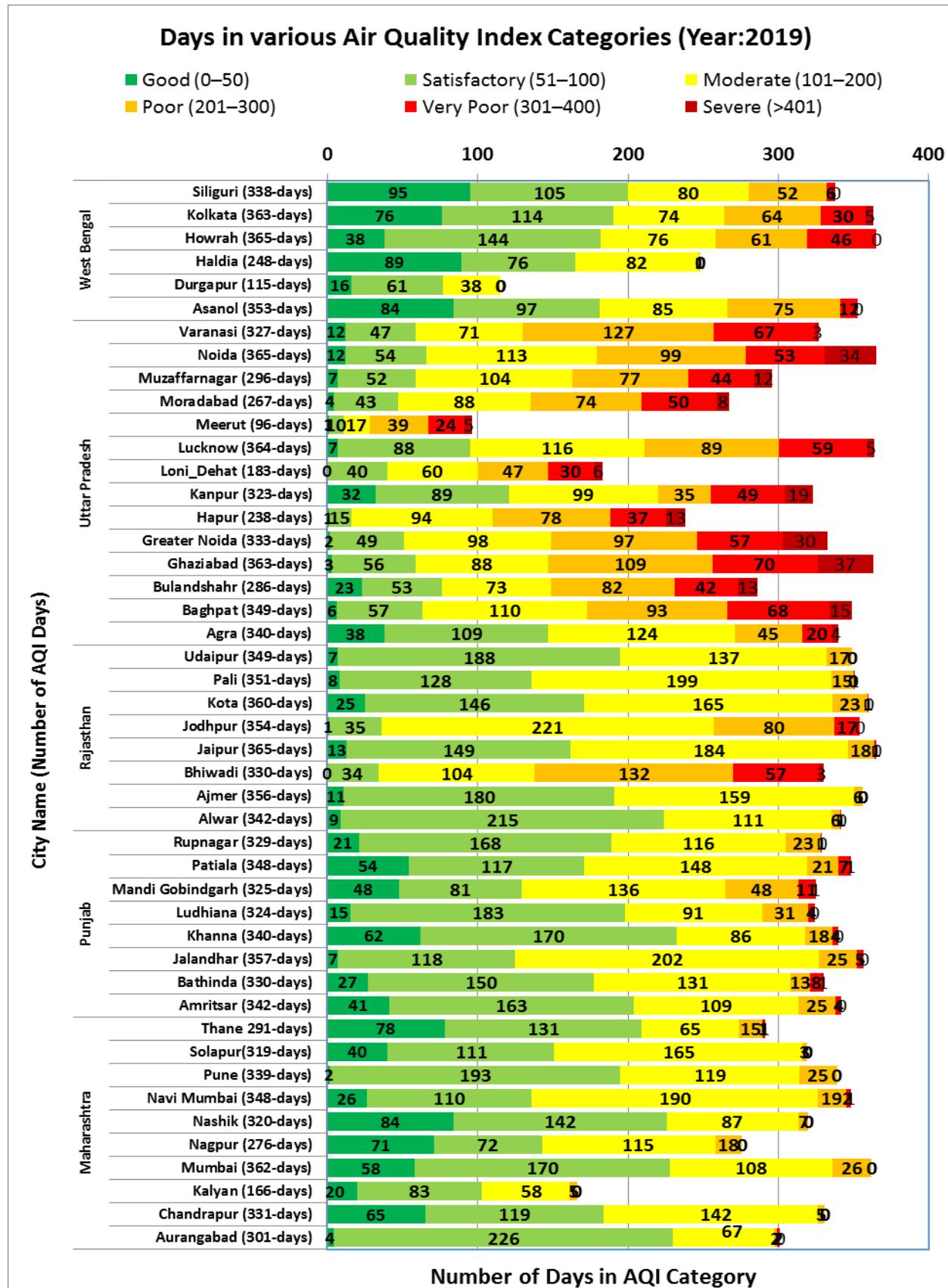


## 8.7 Air Quality Index of different Cities

Air Quality Index of 114 cities of country for year 2019 is presented in the following charts. Number of days in each category for 2019 is depicted of cities under NAQI.







## 9.0 Initiatives for Control of Air Pollution

A multidimensional approach of regulatory, technical, innovative solutions and integrated control strategies have been taken by the government for improving overall air quality in the country. The results have been encouraging with gradual improvement.

- At present air quality monitoring network has been strengthened to 804 manual and 231 real time stations covering 344 and 128 cities respectively. The current manual network will be strengthened by additional 1581 manual and 800 real time monitoring stations.
- A centralized data collection and dissemination system continuously disseminates air quality information including Air Quality Index (AQI) to the public.
- In addition to present ground based air quality monitoring network alternate monitoring methods such as Satellite based monitoring using aerosol optical depth (AOD) is being established to supplement the regulatory monitoring network in collaboration with IIT Delhi under a project titled “Satellite based near real time monitoring of ambient PM<sub>2.5</sub> at national scale for air quality management”.
- Revised National Ambient Air Quality Standards (NAAQS) were notified in 2009 for 12 pollutants in order to protect human and ecological health.
- At present 122 non-attainment cities have been identified based on air quality data from 2014-18 as cities which exceed National Ambient Air Quality Standards. Particulate Matter is a major concern in non-attainment cities.
- City action plans are being implemented for 110 non-attainment cities while action plans are being revised for remaining 12 cities. These plans include actions to control emissions from various city specific sources identified as per emission inventory and source apportionment studies.
- In 2019, National Clean Air Programme (NCAP) was launched by Ministry of Environment, Forest and Climate Change with targets to achieve 20 to 30 % reduction in PM<sub>10</sub> and PM<sub>2.5</sub> concentrations by 2024 across the country.
- NCAP includes mainstreaming initiatives under five national missions of National Action Plan on Climate Change (NAPCC) viz. National Solar Mission, National Mission for Enhanced Energy Efficiency, National Mission on Sustainable Habitat, National Mission for a Green India and National Mission for Sustainable Agriculture.
- Under NCAP ₹224.74 crores have been released to 90 cities including 28 million plus population and 07 cities of north east region in 2019-20 for initiating priority action.
- Further, Fifteenth Finance Commission has recommended ₹4400 cores to 42 million plus cities in 2020-21 for air quality improvement including capacity building of local bodies & State Pollution Control Boards (SPCBs).
- Major sectoral interventions having direct link to air quality improvement are:
  - ✓ Development of low carbon strategies across sectors such as phasing out older coal based power plants, compliance of standards, City Gas Distribution (CGD) network, emphasis on improved power reliability in urban areas, etc.
  - ✓ Promotion of policies such as 5-10% use of biomass pellets with coal for power generation in thermal power plants and 10% ethanol blending in transport fuels by 2022.
  - ✓ Around 63 industry-specific emission standards have been developed or revised for different sectors including thermal power plants. Criteria for categorizing industries in red/orange/green/white categories have been

adopted by SPCBs/PCCs for strengthening enforcement mechanism of environmental norms. Oxides of Sulphur and Nitrogen ( $\text{SO}_2$  and  $\text{NO}_x$ ) standards for glass, lime kiln, reheating furnaces, foundry, ceramic industry, and airport noise) have been evolved and six emission standards (thermal power plant, sugar, man-made fibres, fertilizer, cement, and brick kiln) have been revised.

- ✓ In order to strengthen the enforcement regime Online Continuous Effluent/Emission Monitoring System (OCEMS) in 17-categories of highly polluting industries have been installed at 3519 out of 4251 industrial units in the country.
- ✓ Leapfrogging to BS VI fuel. Specific actions initiated under city action plans to establish e-mobility ecosystem, including vehicle manufacturers, charging infrastructure companies, fleet operators, service providers, etc.
- ✓ Extension of Ujawala Yojana to ensure shifting to cleaner fuel.
- Technical interventions are being also explored to control air pollution. Pilot projects were deployed in Delhi for evaluation of localised air pollution mitigation technologies:
- As air quality management cannot be restricted to administrative boundaries an airshed approach to delineate regions experiencing similar air quality or areas affecting air quality of downwind locations is being initiated to formulate comprehensive air quality management policies.
- Research and Development towards air quality management is being undertaken in collaboration with national and international experts Regional air quality modelling is being taken up to fortify air quality management plans in Indo Gangetic Plain. Air Quality Early Warning System for Delhi has been implemented for facilitating proactive actions.
- Crop residue burning is being closely monitored using satellite based Active Fire Events (AFEs) during the stubble burning periods. Along with financial incentives provided for in-situ crop residue management in States of Punjab, Haryana, Uttar Pradesh and the National Capital Territory of Delhi, several awareness programmes have been organised. Efforts have led to consistent decrease in stubble burning in the Haryana.
- Guidelines including siting criteria, pollution prevention and control measures with respect to fuel leakages during fuel filling operations and from underground storage tanks and VOC emissions released during fuel unloading and filling operations has been prepared. Installation of Vapor Recovery System at new petrol pumps selling more than 100 KLPM and located in cities with million plus population, and, petrol pumps selling more than 300 KLPM and located in cities with population between 01 lakhs to 01 million recommended.
- A super city network programme is being formulated to capture air quality information at 10 sites using state of the art ambient air quality measurement techniques.
- A certification scheme has been established for certifying ambient air quality monitoring instruments in India.
- SAMEER App and Social Media platform (Facebook & Twitter) have been set up by CPCB, which have been very effective in monitoring performance of implementing agencies to curb Air Pollution.

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**NAAQS- 2019**

**ANNEXURES**

### Air Pollutants, their sources and effects

| Pollutant   | Possible Sources  |   | Effects  |  |
|---|---|---|--|--|
|   | Natural   | Anthropogenic   | Human / flora / fauna  | Environment & Property   |
| <b>Sulphur dioxide (SO<sub>2</sub>)</b><br>SO <sub>2</sub> is the chemical compound produced by volcanoes and in various industrial processes and are also a precursor to particulates in the atmosphere.   | • Volcanoes (67%)   | <ul style="list-style-type: none"> <li>• combustion of fossil fuel (coal, heavy fuel oil in thermal power plants, office, factories)</li> <li>• paper Industry</li> <li>• extraction &amp; distribution of fossil fuels</li> <li>• smelting of metals (sulfide ores to produce copper, lead and zinc)</li> <li>• Petroleum refining</li> <li>• combustion process in diesel, petrol, natural gas driven vehicles</li> </ul> | <ul style="list-style-type: none"> <li>• respiratory illness</li> <li>• visibility impairment</li> <li>• aggravate existing heart and lung diseases</li> </ul> | <ul style="list-style-type: none"> <li>• acid rain</li> <li>• aesthetic damage</li> </ul>  |
| <b>Oxides of Nitrogen (NO<sub>x</sub>)</b><br>Oxides of nitrogen are a generic term for a group of highly reactive gases that contain nitrogen and oxygen in varying amounts. NO <sub>x</sub> are emitted as nitrogen oxide (NO) which is rapidly oxidized to more toxic nitrogen dioxide (NO <sub>2</sub> ). Nitrogen dioxide (NO <sub>2</sub> ) is a reddish-brown toxic gas with a characteristic sharp, biting odor and is a prominent air pollutant. | <ul style="list-style-type: none"> <li>• Lightning</li> <li>• Forest fires</li> <li>• Bacterial activity of soil</li> </ul>   | <ul style="list-style-type: none"> <li>• High temperature combustion (internal combustion engines, fossil fuel-fired power stations, industrial)</li> <li>• Burning of Bio-mass and Fossil Fuels</li> </ul>   | <ul style="list-style-type: none"> <li>• irritates the nose and throat</li> <li>• increase susceptibility to respiratory infections</li> </ul>                 | <ul style="list-style-type: none"> <li>• Precursor of ozone formed in the troposphere</li> <li>• Form atmospheric fine particulate matter burden as a result of oxidation to form nitrate aerosol</li> </ul> |
| <b>Respirable Suspended Particulate Matter (PM<sub>10</sub>, size ≤ 10µm, coarse fraction PM<sub>10</sub> - PM<sub>2.5</sub>). called thoracic fraction)</b><br>Particulate matter (PM) is a complex mixture of suspended solid and liquid particle in semi equilibrium with surrounding  | <ul style="list-style-type: none"> <li>• Coarse particles are produced by the mechanical break-up of larger solid particles.</li> <li>• Wind blown dust such as road</li> </ul> | <ul style="list-style-type: none"> <li>• Road traffic emissions particularly from diesel vehicles</li> <li>• Industrial combustion plants some public power generation</li> <li>• Commercial and residential combustion</li> <li>• Non-combustion processes</li> </ul>  | <ul style="list-style-type: none"> <li>• cardio-pulmonary problems</li> <li>• asthma, bronchitis, and pneumonia in older people</li> </ul>                     | Visibility reduction   |

| <b>Pollutant</b>   | <b>Possible Sources</b>  |   | <b>Effects</b>               |                                   |
|--|--|---|------------------------------|-----------------------------------|
|  | <b>Natural</b>   | <b>Anthropogenic</b>  | <b>Human / flora / fauna</b> | <b>Environment &amp; Property</b> |
| gases. The major constituents of RSPM are organic and elemental carbon, metals/elements like silicon, magnesium, iron, ions like sulphates, nitrates, ammonium etc. PM10 can settle in the bronchi and lungs and cause health problems | dust, fly ash, soot, agricultural processes<br><ul style="list-style-type: none"> <li>• physical processes of crushing, grinding and abrasion of surfaces.</li> <li>• photochemically produced particles, such as those found in urban haze</li> <li>• Pollen grains, mould spores, and plant and insect parts</li> <li>• Non-combustible materials released when burning fossil fuels.</li> </ul> | (e.g. quarrying)<br><ul style="list-style-type: none"> <li>• agricultural activities</li> </ul> |                              |                                   |

| Pollutant  | Possible Sources  |   | Effects   |  |
|--|---|---|---|--|
|  | Natural   | Anthropogenic   | Human / flora / fauna   | Environment & Property   |
| <b>Particulate Matter 2.5 (PM<sub>2.5</sub>, size ≤ 2.5µm, fine fraction size up to 2.5 µm, respirable fraction)</b><br>Airborne particles smaller than 2.5 µm called fine particles.<br>Composed mainly of carbonaceous materials (organic and elemental), inorganic compounds (sulfate, nitrate, and ammonium), and trace metal compounds (iron, aluminium, nickel, copper, zinc, and lead). pose the greatest problems, PM <sub>2.5</sub> , tend to penetrate into the gas exchange regions of the lung, and very small particles (< 100 nanometers) may pass through the lungs to affect other organs. The smallest particles, however, less than 100 nm (nanoparticles) can get into the bloodstream and affect the cardiovascular system | <ul style="list-style-type: none"> <li>Fine particles are largely formed from gases.</li> <li>Ultrafine particles are formed by nucleation, which is the initial stage in which gas becomes a particle. These particles can grow up to a size of 1µm either through condensation, when additional gas condensates or coagulation</li> </ul> | <ul style="list-style-type: none"> <li>Vehicular emission</li> <li>Industrial combustion plants some public power generation</li> <li>Commercial and residential combustion</li> </ul>  | <ul style="list-style-type: none"> <li>oxidative stress</li> <li>respiratory symptoms such as irritation of the airways, coughing, or difficulty breathing</li> <li>decreased lung function</li> <li>aggravated asthma</li> <li>chronic bronchitis</li> <li>irregular heartbeat cardio-pulmonary disordera</li> <li>premature death in people with heart or lung disease</li> </ul> | <ul style="list-style-type: none"> <li>aesthetic damage</li> <li>visibility reduction</li> </ul>   |
| <b>Ozone(O<sub>3</sub>)</b><br>Ozone is a pale blue gas, soluble in water and non-polar solvents with specific sharp odor somewhat resembling chlorine bleach.<br>Ozone is a secondary pollutants formed in the atmosphere by reaction between oxides of nitrogen and volatile organic compounds (VOCs) in the presence of sunlight. Peak O <sub>3</sub>   | <ul style="list-style-type: none"> <li>ozone is present in the atmosphere in the stratosphere, in a region also known as the ozone layer between about 10 km and 50 km above the surface</li> </ul>   | <ul style="list-style-type: none"> <li>formed by the reaction of sunlight on air containing hydrocarbons and nitrogen oxides emitted by car engines, industrial operations, chemical solvents to form ozone</li> <li>electronic equipment such as photocopiers</li> </ul> | <ul style="list-style-type: none"> <li>lung function deficits</li> <li>respiratory illness</li> <li>premature death, asthma, bronchitis, heart attack, and other cardiopulmonary problems.</li> <li>ground-level ozone and pollution which interferes with photosynthesis and stunts overall growth of some plant species</li> </ul>  | <ul style="list-style-type: none"> <li>Ozone cracking in car tires, gaskets, O-rings is caused by attack of ozone on any polymer possessing olefinic or double bonds within its chain structure,</li> <li>ozone present in the upper troposphere acts as a greenhouse gas, absorbing some</li> </ul> |

| <b>Pollutant</b>   | <b>Possible Sources</b>             |   | <b>Effects</b>   |  |
|--|-------------------------------------|---|--|--|
|  | <b>Natural</b>                      | <b>Anthropogenic</b>  | <b>Human / flora / fauna</b>   | <b>Environment &amp; Property</b>            |
| levels occur typically during the warmer times of the year.  |                                     |   |  | of the infrared energy emitted by the earth. |
| <b>Lead(Pb)</b><br>Lead is a bright silvery soft, dense, ductile, highly malleable, bluish-white metal that has poor electrical conductivity heavy metal and is highly resistant to corrosion. | • food (lead is absorbed by plants) | <ul style="list-style-type: none"> <li>• Waste incineration</li> <li>• Metal processing</li> <li>• Paint Industry</li> <li>• lead solder in food cans, breast milk, drinking water, Cosmetics, ceramic pottery, burning of firewood or kerosene, indigenous remedies, tobacco and tobacco products, contaminated drinking water, toys, industrial effluents, lead acid batteries, ammunition, paints and varnishes, water pipes</li> <li>• automobile exhaust,</li> </ul> | <ul style="list-style-type: none"> <li>• Pb is rapidly absorbed into the bloodstream and is believed to have adverse effects on the central nervous system, the cardiovascular system, kidneys, and the immune system</li> <li>• causes blood disorders like anemia increase in blood pressure.</li> <li>• potent neurotoxin that accumulates both in soft tissues and the bones.</li> <li>• causes nephropathy, and colic-like abdominal pains.</li> <li>• weakness in fingers, wrists, or ankles.</li> <li>• Miscarriage and reduction of fertility in males, delayed puberty in girls</li> <li>• permanently reduce the cognitive capacity of children</li> </ul> |  |

| Pollutant  | Possible Sources  |   | Effects  |                        |
|--|---|---|--|------------------------|
|  | Natural   | Anthropogenic   | Human / flora / fauna  | Environment & Property |
| <b>Carbon monoxide (CO)</b><br>also called <b>carbonous oxide</b> , is a colorless, odorless and tasteless gas which is slightly lighter than air. It is highly toxic to humans and animals in higher quantities. Mainly formed by incomplete combustion of carbon containing fuels. | <ul style="list-style-type: none"> <li>produced during normal animal metabolism (by the action of heme oxygenase 1 and 2 on the heme from hemoglobin breakdown and produces carboxyhemoglobin in normal persons) in low quantities and has some normal biological functions (signalling molecule)</li> <li>volcanic activity</li> <li>forest and bushfires</li> </ul> | <ul style="list-style-type: none"> <li>Exhaust of internal combustion engines, especially of vehicles with petrol engines</li> <li>Burning of carbon fuels</li> <li>organic combustion in waste incineration</li> <li>power station processes</li> <li>Iron smelting</li> <li>burning of crop residues</li> </ul> | <ul style="list-style-type: none"> <li>CO enters the bloodstream through lungs and combines with hemoglobin forms carboxyhemoglobin. This condition is known as anoxemia, which inhibits blood's oxygen carrying capacity to organs and tissues.</li> <li>Persons with heart disease are sensitive to CO poisoning and may experience chest pain if they breathe the gas while exercising.</li> <li>adverse effects on the fetus of a pregnant woman</li> <li>Infants, elderly persons, and individuals with respiratory diseases are also particularly sensitive.</li> <li>anti-inflammatories, vasodilators and encouragers of neovascular growth</li> </ul> |                        |
| <b>Ammonia (NH<sub>3</sub>)</b><br>A compound of nitrogen and hydrogen, a colourless gas with a characteristic pungent odour. Contributes significantly to the nutritional needs of terrestrial organisms by serving as a  | <ul style="list-style-type: none"> <li>putrefaction of nitrogenous animal and vegetable matter</li> <li>Ammonia and ammonium</li> </ul>   | <ul style="list-style-type: none"> <li>Farms</li> <li>Fertilizers Industry</li> <li>Industrial sites that store ammonia or use it as a refrigerant can release high levels if the chemical leaks or is spilled</li> </ul>   | <ul style="list-style-type: none"> <li>irritating to skin, eyes, throat, and lungs and cause coughing</li> <li>burns</li> <li>Lung damage and death may occur after exposure to very high</li> </ul>   | Odour                  |

| <b>Pollutant</b>  | <b>Possible Sources</b>   |   | <b>Effects</b>   |                                   |
|---|---|---|--|-----------------------------------|
|   | <b>Natural</b>  | <b>Anthropogenic</b>  | <b>Human / flora / fauna</b>   | <b>Environment &amp; Property</b> |
| precursor to food and fertilizers, and either directly or indirectly, is also a building block for the synthesis of many pharmaceuticals.   | <p>salts are also found in small quantities in rainwater, fertile soil and in seawater</p> <ul style="list-style-type: none"> <li>• during volcanic eruption</li> <li>• The kidneys secrete NH<sub>3</sub> to neutralize excess acid</li> </ul> |   | concentrations of ammonia  |                                   |
| <b>Benzene (C<sub>6</sub>H<sub>6</sub>)</b><br>Benzene is a colorless, sweet smelling liquid. Benzene is generated whenever carbon-rich materials undergo incomplete combustion. Benzene is generated whenever carbon-rich materials undergo incomplete combustion. | <ul style="list-style-type: none"> <li>• volcanoes</li> <li>• forest fires</li> </ul>   | <ul style="list-style-type: none"> <li>• Combustion of fuel (automotive fuel, wood and stationary fossil fuel, other aromatics)</li> <li>• evaporation (fuel storage containers, during refueling)</li> <li>• Industrial emission</li> <li>• Coke oven</li> <li>• Perchlorethlyene is emitted from some dry cleaning facilities</li> <li>• tobacco smoke, wood smoke</li> <li>• glues, paints, furniture wax, and detergents</li> </ul> | <ul style="list-style-type: none"> <li>• Hematotoxic, neurotoxic, leukemogenic, carcinogenic effects</li> <li>• Chronic exposure to benzene may cause chromosomal damage, immune suppression, aplastic anemia, myelodysplastic syndrome, leukemia, non-Hodgkin's lymphoma, and cancer of the lung and nasopharynx</li> <li>• Effect the Reproductive system, developing fetus and fertility in men, low birth weights, delayed bone formation, and bone marrow damage</li> </ul> |                                   |
| <b>Polyaromatic hydrocarbons (BaP) (particulate phase only)</b><br>is a five-ring polycyclic aromatic   | <ul style="list-style-type: none"> <li>• coal tar (after a forest fire),</li> <li>• eruption of</li> </ul>  | <ul style="list-style-type: none"> <li>• Incomplete combustion of fuels (processing of coal and crude oil)</li> </ul>   | <ul style="list-style-type: none"> <li>• Mutagenic and highly carcinogenic (skin, lung, and bladder cancer in</li> </ul>   |                                   |

| <b>Pollutant</b>   | <b>Possible Sources</b>  |  | <b>Effects</b>   |  |
|--|--|--|--|--|
|  | <b>Natural</b>   | <b>Anthropogenic</b>   | <b>Human / flora / fauna</b>   | <b>Environment &amp; Property</b>                                    |
| hydrocarbon whose metabolites are mutagenic and highly carcinogenic  | volcanoes  | <ul style="list-style-type: none"> <li>• Combustion of natural gas</li> <li>• Road transport</li> <li>• Industrial plant</li> <li>• Tobacco smoke</li> <li>• coal tar</li> <li>• automobile exhaust fumes (especially diesel engines), in all smoke resulting from the combustion of organic material</li> <li>• charbroiled food, burnt toast, cooked meat products, in burnt foods such as coffee</li> </ul> | <p>humans and in animals)</p> <ul style="list-style-type: none"> <li>• skin rash or eye irritation</li> <li>• Bronchitis</li> </ul>  |  |
| <b>Arsenic (As)</b><br>is a solid layered, a ruffled analogue of graphite, metallic gray in color and is a semiconductor. It is a potent poison IARC) recognizes arsenic and group 1 carcinogen (IARC) | <ul style="list-style-type: none"> <li>• volcanic ash, weathering of the arsenic-containing mineral and ores as well as groundwater.</li> <li>• food, water, soil and air</li> </ul> | <ul style="list-style-type: none"> <li>• Smelting of metals,</li> <li>• Combustion of fuels (especially of low-grade brown coal)</li> <li>• Use of pesticides.</li> <li>• wood preservation, glass production, nonferrous metal alloys, electronic semiconductor manufacturing.</li> <li>• coke oven emissions associated with the smelter industry</li> </ul>   | <ul style="list-style-type: none"> <li>• epigenetic changes</li> <li>• multi-system organ failure</li> <li>• As poisoning</li> </ul>   |  |
| <b>Nickel (Ni)</b><br>a silvery-white lustrous corrosion-resistant metal with a slight golden tinge  | <ul style="list-style-type: none"> <li>• <u>urease</u> (an enzyme which assists in the hydrolysis of urea) contains nickel</li> </ul>  | <ul style="list-style-type: none"> <li>• Combustion of fossil fuels</li> <li>• Nickel plating</li> <li>• Metallurgical processes</li> </ul>  | <p>Nickel sulfide fume and dust is believed to be carcinogenic</p> <ul style="list-style-type: none"> <li>• allergy, dermatitis.</li> </ul> <p>Sensitivity to nickel may also be present in patients with pompholyx.</p> | <ul style="list-style-type: none"> <li>• explosive in air</li> </ul> |

**Revised National Ambient Air Quality Standards (NAAQS)**  
 [NAAQS Notification dated 18<sup>th</sup> November, 2009]

| S.<br>No. | Pollutants   | Time<br>Weighted<br>Average | Concentration in Ambient Air                            |  | <b>Methods of Measurement</b>   |
|-----------|--|-----------------------------|---|--|---|
|           |  |                             | Industrial,<br>Residential,<br>Rural and<br>other Areas | Ecologically<br>Sensitive Area<br>(notified by<br>Central<br>Government) |   |
| 1         | Sulphur Dioxide<br>(SO <sub>2</sub> ), µg/m <sup>3</sup>                       | Annual*                     | 50  | 20   | 1. Improved West and Gaeke<br>2. Ultraviolet Fluorescence   |
|           |  | 24 Hours**                  | 80  | 80   |   |
| 2         | Nitrogen Dioxide<br>(NO <sub>2</sub> ), µg/m <sup>3</sup>                      | Annual*                     | 40  | 30   | 1. Modified Jacob & Hochheiser<br>2. Chemiluminescence  |
|           |  | 24 Hours**                  | 80  | 80   |   |
| 3         | Particulate Matter<br>(Size <10µm) or PM <sub>10</sub> µg/m <sup>3</sup>       | Annual*                     | 60  | 60   | 1. Gravimetric<br>2. TEOM<br>3. Beta attenuation  |
|           |  | 24 Hours**                  | 100   | 100  |   |
| 4         | Particulate Matter<br>(Size <2.5 µm) or PM <sub>2.5</sub><br>µg/m <sup>3</sup> | Annual*                     | 40  | 40   | 1. Gravimetric<br>2. TEOM<br>3. Beta attenuation  |
|           |  | 24 Hours **                 | 60  | 60   |   |
| 5         | Ozone (O <sub>3</sub> ), µg/m <sup>3</sup>                                     | 8 hours**                   | 100   | 100  | 1. UV photometric<br>2. Chemiluminescence<br>3. Chemical Method   |
|           |  | 1 hours **                  | 180   | 180  |   |
| 6         | Lead (Pb), µg/m <sup>3</sup>   | Annual *                    | 0.50  | 0.50   | 1. AAS/ICP Method after sampling<br>using EPM 2000 or equivalent filter<br>paper<br>2. ED-XRF using Teflon filter |
|           |  | 24 Hour**                   | 1.0   | 1.0  |   |
| 7         | Carbon Monoxide (CO),<br>mg/m <sup>3</sup>                                     | 8 Hours **                  | 02  | 02   | Non dispersive Infra Red (NDIR)<br>Spectroscopy   |
|           |  | 1 Hour**                    | 04  | 04   |   |
| 8         | Ammonia (NH <sub>3</sub> ), µg/m <sup>3</sup>                                  | Annual*                     | 100   | 100  | 1. Chemiluminescence<br>2. Indophenol blue method   |
|           |  | 24 Hour**                   | 400   | 400  |   |
| 9         | Benzene (C <sub>6</sub> H <sub>6</sub> ) , µg/m <sup>3</sup>                   | Annual *                    | 05  | 05   | 1. Gas chromatography based<br>continuous analyzer<br>2. Adsorption and Desorption<br>followed by GC analysis     |
| 10        | Benzo(a)Pyrene (BaP)-<br>particulate phase only,<br>ng/m <sup>3</sup>          | Annual*                     | 01  | 01   | Solvent extraction followed by<br>HPLC/GC analysis  |
| 11        | Arsenic (As), ng/m <sup>3</sup>  | Annual*                     | 06  | 06   | AAS/ICP method after sampling on<br>EPM 2000 or equivalent filter paper   |
| 12        | Nickel (Ni), ng/m <sup>3</sup>   | Annual*                     | 20  | 20   | AAS/ICP method after sampling on<br>EPM 2000 or equivalent filter paper   |

\* Annual Arithmetic mean of minimum 104 measurements in a year at a particular site taken twice a week 24 hourly at uniform interval. \*\* 24 hourly 08 hourly or 01 hourly monitored values, as applicable shall be complied with 98% of the time in a year. 2% of the time, they may exceed the limits but not on two consecutive days of monitoring.

NOTE: Whenever and wherever monitoring results on two consecutive days of monitoring exceed the limits specified above for the respective category, it shall be considered adequate reason to institute regular or continuous monitoring and further investigation.

**Levels of Sulphur Dioxide (SO<sub>2</sub>) in locations / Ambient Air Quality Monitoring Stations under NAMP during 2019**

| State / UT     | City                           | Location  | Concentration in µg/m <sup>3</sup> |                             |                | No. of days in the year |                 | Standard deviation |
|----------------|--------------------------------|---|------------------------------------|-----------------------------|----------------|-------------------------|-----------------|--------------------|
|                |                                |   | Minimum (24-hourly average)        | Maximum (24-hourly average) | Annual Average | Monitored               | Exceeding NAAQS |                    |
| Andhra Pradesh | Anantapur                      | Kamala Nagar  | 4                                  | 15                          | 6              | 105                     | 0               | 2                  |
|                |                                | APIIC Zoni office industrial estate   | 4                                  | 10                          | 5              | 106                     | 0               | 1                  |
|                |                                | Cancer Unit. G.G.Hsharada Nagar, JNTU Road  | 4                                  | 9                           | 5              | 108                     | 0               | 1                  |
|                |                                | D.No.6/5/545, Ram Nagar Colony  | 4                                  | 12                          | 5              | 108                     | 0               | 1                  |
|                | Chittoor                       | GNC Toll Gate Tirumala  | 2                                  | 19                          | 5              | 107                     | 0               | 3                  |
|                |                                | Near Nutrine Confectionery, Palamaner Road  | 4                                  | 9                           | 5              | 107                     | 0               | 0                  |
|                |                                | O/O Mines and Geology, Old Collector Office, Greampet                             | 4                                  | 6                           | 5              | 104                     | 0               | 0                  |
|                |                                | Sankar Foundary, Industrial Estate, Adjacent of DIC Office                        | 4                                  | 7                           | 5              | 106                     | 0               | 0                  |
|                |                                | Rangachari street, Shanthapeta.   | 4                                  | 6                           | 5              | 92                      | 0               | 0                  |
|                | Eluru                          | Ashram Diagnostic Centre  | 4                                  | 6                           | 5              | 108                     | 0               | 0                  |
|                |                                | District Head quarters hospital   | 4                                  | 6                           | 5              | 108                     | 0               | 0                  |
|                |                                | M/s Laxmi Propylene Ltd., Plot.No. 25, Industrial Park, Satrampadu                | 4                                  | 6                           | 5              | 108                     | 0               | 0                  |
|                |                                | Somalingeswara nilayam D.N.7B-18-5, Thooru Veedhi, Eastern street, Paidichintaadu | 4                                  | 6                           | 5              | 108                     | 0               | 0                  |
|                |                                | Near Hindu College, Market Road   | 4                                  | 5                           | 5              | 100                     | 0               | 0                  |
|                | Guntur                         | A.P. Pollution Control Board, D.No.4-5-4/5C,4/3, Navabharath nagar, Ring Road     | 4                                  | 6                           | 5              | 101                     | 0               | 0                  |
|                |                                | Distirct Industries Center office Buiding Autonagar                               | 4                                  | 5                           | 5              | 100                     | 0               | 0                  |
|                |                                | Government General hospital   | 4                                  | 6                           | 5              | 101                     | 0               | 0                  |
|                |                                | Near ICL Industries, Yerragunta, YSR  | 4                                  | 19                          | 6              | 108                     | 0               | 2                  |
|                | Kadapa                         | Devi Diabetes & Hormone Centre, 7 Roads   | 4                                  | 18                          | 5              | 106                     | 0               | 2                  |
|                |                                | DIC Office,Kadapa   | 4                                  | 19                          | 5              | 108                     | 0               | 2                  |
|                |                                | Rajiv Gandhi Institute of Medical Sciences  | 4                                  | 7                           | 5              | 108                     | 0               | 0                  |
|                |                                | Municipal Primary School  | 4                                  | 14                          | 5              | 107                     | 0               | 1                  |
|                |                                | Office Building Ramanayyapeta   | 4                                  | 13                          | 8              | 102                     | 0               | 1                  |
|                | Kakinada                       | Gram Panchayathi building, Suryaraopeta   | 4                                  | 13                          | 8              | 105                     | 0               | 2                  |
|                |                                | MEE Seva / MEPMA Office, Sailipeta  | 4                                  | 13                          | 9              | 105                     | 0               | 2                  |
|                |                                | Petro Chemical Engineering Block, JNTU , Pithapuram Road                          | 4                                  | 12                          | 8              | 106                     | 0               | 2                  |
|                |                                | Mourya Inn, Krishna Nagar   | 4                                  | 11                          | 5              | 108                     | 0               | 1                  |
|                | Kurnool                        | APIIC Building Industrial estate, Kallur at IDA Bobbili Growth Center             | 4                                  | 13                          | 5              | 107                     | 0               | 2                  |
|                |                                | Rajvihar Circle   | 4                                  | 14                          | 6              | 108                     | 0               | 2                  |
|                |                                | Pump House, Venkataramana Colony  | 4                                  | 12                          | 5              | 108                     | 0               | 1                  |
|                |                                | Venkatareddy Nagar, Vedayapalem   | 4                                  | 6                           | 5              | 107                     | 0               | 0                  |
|                | Nellore                        | D. No.15-471, James Garden, Venkata Ramapuram, Nellore, SPSR Nellore District     | 4                                  | 6                           | 5              | 107                     | 0               | 0                  |
|                |                                | Chandramouli nagar  | 4                                  | 6                           | 5              | 107                     | 0               | 0                  |
|                |                                | Dr.P.V. Rama chandra Reddy Hospital, Brindavnam                                   | 4                                  | 5                           | 5              | 107                     | 0               | 0                  |
|                |                                | Near Court Center   | 4                                  | 6                           | 5              | 107                     | 0               | 0                  |
|                | Ongole                         | APIIC, Administrative Office, Growth Centre, Gundlapalli                          | 4                                  | 5                           | 5              | 104                     | 0               | 0                  |
|                |                                | Ongole Municipal Corporation  | 4                                  | 6                           | 5              | 106                     | 0               | 0                  |
|                |                                | Prakasam Milk Product Compay  | 4                                  | 6                           | 5              | 105                     | 0               | 0                  |
|                |                                | Staff Clud Building, A.P. Paper Mill  | 5                                  | 14                          | 9              | 98                      | 0               | 2                  |
|                | Rajahmundry/ Rajamahendravaram | GAIL Administrative Office, A.V. Apparao Road                                     | 5                                  | 15                          | 8              | 104                     | 0               | 2                  |
|                |                                | MCH Block ,District Hospital, Near Central Prison, Lalacheruvu Road               | 4                                  | 12                          | 8              | 105                     | 0               | 2                  |
|                |                                | APEPDCL, Circle Office Godavari Gattu   | 4                                  | 16                          | 8              | 97                      | 0               | 2                  |
|                |                                | SAMKRG Pistons Quarters Bulding, Near IDA, Pydibhimavaram                         | 6                                  | 12                          | 8              | 96                      | 0               | 1                  |
|                | Srikakulam                     | District cooperative office at SKLM Old   | 5                                  | 11                          | 8              | 106                     | 0               | 1                  |

Annexure 3: Location wise SO<sub>2</sub> - 2019

| State / UT        | City            | Location  | Concentration in µg/m <sup>3</sup> |                             |                | No. of days in the year | Standard deviation |
|-------------------|-----------------|---|------------------------------------|-----------------------------|----------------|-------------------------|--------------------|
|                   |                 |   | Minimum (24-hourly average)        | Maximum (24-hourly average) | Annual Average |                         |                    |
|                   |                 | Bridge  |                                    |                             |                |                         |                    |
|                   |                 | APIIC, Kushalapuram   | 5                                  | 15                          | 8              | 95                      | 0                  |
|                   |                 | Municipal corporation Office, Old Bustand   | 5                                  | 12                          | 8              | 107                     | 0                  |
|                   | Tirupati        | Regional Science Centre, Chittoor Bypass  | 4                                  | 6                           | 5              | 106                     | 0                  |
|                   |                 | Municipal Office, Tilak Road  | 4                                  | 8                           | 5              | 107                     | 0                  |
|                   |                 | APPCB-Regional Office, 1st Floor, APSFC Building, NT road                                 | 4                                  | 6                           | 5              | 100                     | 0                  |
|                   |                 | Sri Venkateswara Guest House (TTD SV Rest House), Near APSRTC Bus Stand                   | 4                                  | 8                           | 5              | 108                     | 0                  |
|                   | Vijaywada       | NTR Veterinary college of sciences, Gannavaram  | 4                                  | 11                          | 5              | 107                     | 0                  |
|                   |                 | VR Siddhartha Engineering college , Kanuru  | 4                                  | 6                           | 5              | 107                     | 0                  |
|                   |                 | APIIC, IALA, IDA, Kondapalli  | 4                                  | 6                           | 5              | 106                     | 0                  |
|                   |                 | Benz Circle   | 4                                  | 7                           | 5              | 107                     | 0                  |
|                   |                 | Autonagar   | 4                                  | 7                           | 5              | 108                     | 0                  |
|                   |                 | Police Control Room   | 5                                  | 6                           | 5              | 89                      | 0                  |
|                   |                 | A.P. Pollution Control Board, plot no. 41, Sri Kanakadurga Officers colony, Gurunank Road | 4                                  | 7                           | 5              | 108                     | 0                  |
|                   |                 | Gram Panchayat Office, Yenamalakuduru   | 4                                  | 6                           | 5              | 108                     | 0                  |
|                   |                 | Indian Medical Association Hall,Eluru Road, Governorpet                                   | 4                                  | 6                           | 5              | 107                     | 0                  |
|                   |                 | Industrial Estate, Marripalem   | 5                                  | 13                          | 9              | 108                     | 0                  |
|                   | Vishakhapatnam  | Panchayat Raj office, Mindi   | 5                                  | 11                          | 8              | 105                     | 0                  |
|                   |                 | Police Barracks   | 6                                  | 14                          | 9              | 105                     | 0                  |
|                   |                 | INS-Virabahu, Naval Area  | 5                                  | 10                          | 7              | 93                      | 0                  |
|                   |                 | Seethammadhara  | 5                                  | 13                          | 8              | 99                      | 0                  |
|                   |                 | Ganapuram Area  | 6                                  | 13                          | 9              | 107                     | 0                  |
|                   |                 | Pedagantyada (V), Gajuwada (M)  | 5                                  | 11                          | 8              | 104                     | 0                  |
|                   |                 | CWMP, RAMKY, Parawada   | 5                                  | 14                          | 9              | 106                     | 0                  |
|                   |                 | MVP Raitu Bajar   | 5                                  | 15                          | 7              | 102                     | 0                  |
|                   | Vizianagaram    | Industrial Growth Centre, APIIC Building at IDA Bobbili                                   | 5                                  | 12                          | 8              | 101                     | 0                  |
|                   |                 | APIIC Building, VT Agraharam, Industrial area   | 5                                  | 14                          | 8              | 105                     | 0                  |
|                   |                 | Municipal Kaspa High School   | 6                                  | 12                          | 8              | 102                     | 0                  |
|                   |                 | Municipal Office  | 5                                  | 13                          | 8              | 93                      | 0                  |
| Arunachal Pradesh | Itnagar         | PCCF's Office Compound  | 2                                  | 10                          | 3              | 43                      | 0                  |
|                   | Naharlagun      | APSPCB Office compound  | 2                                  | 6                           | 3              | 34                      | 0                  |
| Assam             | Bongaigaon      | Oil India Ltd. PS-6, Chirang  | 3                                  | 12                          | 4              | 70                      | 0                  |
|                   |                 | Barpara Office Building   | 3                                  | 11                          | 4              | 86                      | 0                  |
|                   | Daranga         | BATAD, Sandoop Jhankar town of Bhutan, Baska  | 4                                  | 11                          | 7              | 94                      | 0                  |
|                   | Dibrugarh       | Dibrugarh Office Building   | 4                                  | 9                           | 5              | 89                      | 0                  |
|                   | Golaghat        | Golaghat Office Building  | 4                                  | 8                           | 6              | 80                      | 0                  |
|                   | Guwahati        | Head Office, Bamunimaidam   | 7                                  | 24                          | 12             | 134                     | 0                  |
|                   |                 | Boragaon, IASST, Kamrup   | 5                                  | 12                          | 7              | 114                     | 0                  |
|                   |                 | Guwahati University, Kamrup   | 5                                  | 11                          | 7              | 117                     | 0                  |
|                   |                 | ITI Building, Gopinath Nagar  | 5                                  | 12                          | 7              | 117                     | 0                  |
|                   |                 | Khanapara, Central Dairy, Kamrup  | 5                                  | 15                          | 7              | 129                     | 0                  |
|                   |                 | Near Pragjyotish College, Santipur  | 5                                  | 11                          | 7              | 133                     | 0                  |
|                   | Margherita      | Coal India Office   | 4                                  | 9                           | 6              | 91                      | 0                  |
|                   | Nagaon          | Water Resources Div., Christian Patty, Nagaon College                                     | 5                                  | 10                          | 7              | 97                      | 0                  |
|                   | Nalbari         | PWD Rural Div Office Complex, near Gordon Boy's GS School                                 | 4                                  | 10                          | 7              | 77                      | 0                  |
|                   | North Lakhimpur | Bazar Patti, North Lakhimpur Town   | 5                                  | 10                          | 7              | 86                      | 0                  |
|                   | Silchar         | Govt. Boys HS School, Janiganj  | 5                                  | 8                           | 6              | 74                      | 0                  |
|                   |                 | RLO, Ithkola Market, Ghaniwala Road   | 5                                  | 9                           | 7              | 75                      | 0                  |
|                   | Sivasagar       | Sivasagar Office Building   | 4                                  | 8                           | 6              | 102                     | 0                  |
|                   |                 | Usha Lodge, near ONGCL Colony   | 5                                  | 9                           | 7              | 103                     | 0                  |
|                   |                 | Tezpur Office Building  | 6                                  | 10                          | 7              | 86                      | 0                  |
|                   | Tinsukia        | Digboi Carbon factory Campus, Borguri   | 4                                  | 8                           | 6              | 94                      | 0                  |
|                   |                 | Shreepuria, Borguri   | 4                                  | 8                           | 6              | 98                      | 0                  |
|                   |                 | Shivdham  | 4                                  | 9                           | 6              | 98                      | 0                  |

Annexure 3: Location wise SO<sub>2</sub> - 2019

| State / UT                           | City                           | Location   | Concentration in µg/m <sup>3</sup> |                             |                | No. of days in the year |                 | Standard deviation |   |
|--------------------------------------|--------------------------------|--|------------------------------------|-----------------------------|----------------|-------------------------|-----------------|--------------------|---|
|                                      |                                |  | Minimum (24-hourly average)        | Maximum (24-hourly average) | Annual Average | Monitored               | Exceeding NAAQS |                    |   |
| Bihar                                | Begusarai                      | Begusarai  | 9                                  | 19                          | 12             | 104                     | 0               | 2                  |   |
|                                      | Darbhanga                      | Smt Baby Kumari, Ashok Hotel, Kadirabad Chowk                      | 12                                 | 22                          | 15             | 105                     | 0               | 2                  |   |
|                                      | Gaya                           | Godam Road, Raja Market  | 6                                  | 15                          | 11             | 104                     | 0               | 2                  |   |
|                                      | Muzaffarpur                    | BSPCB Regional Office, Bela Industrial Area, Bela                  | 10                                 | 22                          | 14             | 104                     | 0               | 2                  |   |
|                                      | Patna                          | Beltron Bhawan, Shastri Nagar                                      | 2                                  | 7                           | 2              | 59                      | 0               | 1                  |   |
|                                      |                                | Gandhi Maidan, Auto Exhaust Test Centre                            | 2                                  | 14                          | 4              | 75                      | 0               | 3                  |   |
|                                      | Rajgir                         | Sujkund, Near Samuraji hotel                                       | 5                                  | 15                          | 10             | 104                     | 0               | 2                  |   |
| Chandigarh                           | Chandigarh                     | Sasaram  | 6                                  | 13                          | 10             | 105                     | 0               | 2                  |   |
|                                      |                                | Modern Foods, Industrial Area                                      | 2                                  | 2                           | 2              | 149                     | 0               | 0                  |   |
|                                      |                                | Sector-17 C  | 2                                  | 2                           | 2              | 142                     | 0               | 0                  |   |
|                                      |                                | Punjab Engineering College, Sector- 12                             | 2                                  | 2                           | 2              | 163                     | 0               | 0                  |   |
|                                      |                                | Sector-39, IMTECH  | 2                                  | 2                           | 2              | 155                     | 0               | 0                  |   |
| Chattisgarh                          | Durg-Bhillainagar              | Kaimbwala Village  | 2                                  | 2                           | 2              | 140                     | 0               | 0                  |   |
|                                      |                                | Bilaspur   | Regional Office, CECB Vyapar Vihar | 4                           | 7              | 6                       | 91              | 0                  | 1 |
|                                      |                                | Visak Hostel, Sector-4   | 5                                  | 8                           | 7              | 77                      | 0               | 1                  |   |
|                                      |                                | R.O., 5/32 Banglow Office Building                                 | 3                                  | 8                           | 4              | 83                      | 0               | 1                  |   |
|                                      |                                | M.P. Laghu Udyog Nigam   | 7                                  | 11                          | 9              | 84                      | 0               | 1                  |   |
|                                      | Korba                          | CSIDC Industrial Growth Center, Borai, Durg                        | 7                                  | 10                          | 8              | 81                      | 0               | 1                  |   |
|                                      |                                | HIG 21,22.Near Ghantaghar, MP Extension                            | 6                                  | 11                          | 8              | 97                      | 0               | 1                  |   |
|                                      |                                | Pragati Nagar NTPC Colony, Jamnipali                               | 5                                  | 10                          | 7              | 103                     | 0               | 1                  |   |
|                                      | Raipur                         | I.T.I., Rampur   | 6                                  | 13                          | 9              | 100                     | 0               | 1                  |   |
|                                      |                                | New HIG-9, Hirapur/Housing Board Complex                           | 11                                 | 19                          | 15             | 67                      | 0               | 2                  |   |
|                                      |                                | Kabir Nagar  | 13                                 | 25                          | 17             | 40                      | 0               | 3                  |   |
| Dadra & Nagar Haveli and Daman & Diu | Baldevi (Dadra & Nagar Haveli) | Baldevi Village, Athola, Dandul Faliya, Teh:Dadra & Nagar Haveli   | 8                                  | 25                          | 16             | 97                      | 0               | 6                  |   |
|                                      | Silvassa                       | Khadoli Industrial Area, Khadoli                                   | 10                                 | 41                          | 26             | 99                      | 0               | 12                 |   |
|                                      |                                | Chetan Guest House, Near Post Office, Piperia, silvassa Char Rasta | 11                                 | 41                          | 25             | 100                     | 0               | 12                 |   |
|                                      | Daman                          | Prima Plastic, Kadaiya Industrial Area, Kadaiya                    | 9                                  | 39                          | 23             | 97                      | 0               | 11                 |   |
|                                      |                                | Mashal Chawk, Nani Daman   | 8                                  | 37                          | 21             | 99                      | 0               | 10                 |   |
|                                      | Patlara (Daman)                | Makat Faliya/ Ambavadi, Patlara Village, Moti Daman Teh:Daman      | 8                                  | 25                          | 15             | 100                     | 0               | 6                  |   |
| Delhi                                | Delhi                          | N.Y. School, Sarojini Nagar, Delhi                                 | 2                                  | 9                           | 3              | 88                      | 0               | 1                  |   |
|                                      |                                | Janakpuri  | 4                                  | 16                          | 5              | 120                     | 0               | 2                  |   |
|                                      |                                | Naraina Industrial Area, Delhi                                     | 2                                  | 23                          | 4              | 88                      | 0               | 3                  |   |
|                                      |                                | Nizamuddin   | 4                                  | 17                          | 5              | 116                     | 0               | 2                  |   |
|                                      |                                | Pritampura   | 4                                  | 18                          | 5              | 127                     | 0               | 3                  |   |
|                                      |                                | Shahadra   | 4                                  | 18                          | 6              | 113                     | 0               | 3                  |   |
|                                      |                                | Shahzada Bagh  | 4                                  | 21                          | 5              | 109                     | 0               | 2                  |   |
|                                      |                                | Siri Fort  | 4                                  | 16                          | 5              | 113                     | 0               | 2                  |   |
|                                      |                                | Town Hall, Ayurvedic Dispensary, Chandni Chowk, Delhi              | 2                                  | 10                          | 4              | 88                      | 0               | 2                  |   |
| Goa                                  | Amona                          | Amona, Bicholim  | 9                                  | 12                          | 11             | 105                     | 0               | 1                  |   |
|                                      | Assanora                       | Assanora Junction, Bardez  | 9                                  | 12                          | 11             | 104                     | 0               | 1                  |   |
|                                      | Bicholim                       | Bicholim   | 9                                  | 12                          | 11             | 103                     | 0               | 1                  |   |
|                                      | Codli                          | Codli Tisk, Ponda, Sanguem   | 9                                  | 12                          | 10             | 103                     | 0               | 1                  |   |
|                                      | Cuncolim                       | Cuncolim   | 9                                  | 13                          | 11             | 102                     | 0               | 1                  |   |
|                                      | Honda                          | Honda Junction, Sattari  | 9                                  | 12                          | 11             | 104                     | 0               | 1                  |   |
|                                      | Kundaim                        | Kundaim Industrial Estate  | 9                                  | 13                          | 11             | 104                     | 0               | 1                  |   |
|                                      | Mapusa                         | Mapusa town  | 2                                  | 7                           | 3              | 90                      | 0               | 1                  |   |
|                                      | Margao                         | Margao Town  | 9                                  | 13                          | 11             | 102                     | 0               | 1                  |   |
|                                      | Mormugao                       | Fire Brigade Station, Port Trust                                   | 2                                  | 8                           | 3              | 68                      | 0               | 2                  |   |
|                                      | Panaji                         | Old GSPCB premises, Patto  | 2                                  | 17                          | 3              | 77                      | 0               | 2                  |   |
|                                      | Ponda                          | Ponda Town   | 9                                  | 12                          | 11             | 105                     | 0               | 1                  |   |
|                                      | Sanguem                        | Near Railway Station at Kalem, Sanguem                             | 9                                  | 12                          | 11             | 103                     | 0               | 1                  |   |
|                                      | Tilamol                        | Quepem, Tilamol  | 10                                 | 13                          | 11             | 102                     | 0               | 1                  |   |
|                                      | Tuem                           | Tuem Industrial Estate   | 9                                  | 13                          | 11             | 104                     | 0               | 1                  |   |
|                                      | Usgao                          | Usgao Plae, Junction, Ponda  | 9                                  | 12                          | 11             | 96                      | 0               | 1                  |   |
|                                      | Vasco                          | Fuse Call Office, Mormugao   | 2                                  | 11                          | 3              | 88                      | 0               | 2                  |   |
| Gujarat                              | Ahmedabad                      | Naroda, G.I.D.C., Ahmedabad  | 14                                 | 33                          | 19             | 87                      | 0               | 4                  |   |

Annexure 3: Location wise SO<sub>2</sub> - 2019

| State / UT       | City         | Location  | Concentration in µg/m <sup>3</sup> |                             |                | No. of days in the year |                 | Standard deviation |
|------------------|--------------|---|------------------------------------|-----------------------------|----------------|-------------------------|-----------------|--------------------|
|                  |              |   | Minimum (24-hourly average)        | Maximum (24-hourly average) | Annual Average | Monitored               | Exceeding NAAQS |                    |
| Gujarat          | Anand        | Cadilla Bridge Narol  | 12                                 | 37                          | 20             | 86                      | 0               | 5                  |
|                  |              | Bhagavathi Estate, Keval Kanta Road, Rakhiyal                                     | 12                                 | 35                          | 20             | 88                      | 0               | 5                  |
|                  |              | Reliable Products, 61/62 Ilaben estate,Piranadump Site,Narol (previous Dyno Wash) | 11                                 | 39                          | 22             | 87                      | 0               | 6                  |
|                  |              | L.D. Engg. College  | 14                                 | 33                          | 20             | 88                      | 0               | 4                  |
|                  |              | Shardaben Hospital, Saraspur  | 13                                 | 34                          | 20             | 86                      | 0               | 5                  |
|                  |              | R.C. Technical High School, Mirzapur  | 13                                 | 35                          | 20             | 86                      | 0               | 5                  |
|                  |              | AZL Behrampura, Ahmadabad   | 13                                 | 38                          | 20             | 87                      | 0               | 5                  |
|                  |              | Sola L.T. Chanakyapuri Pumping Station  | 11                                 | 35                          | 21             | 88                      | 0               | 6                  |
|                  | Anklesvar    | Rallis India Ltd.   | 13                                 | 36                          | 20             | 88                      | 0               | 5                  |
|                  |              | Durga Traders, Bhavanafarm Society  | 12                                 | 35                          | 19             | 88                      | 0               | 5                  |
|                  | Jamnagar     | Fisheries Office  | 11                                 | 39                          | 19             | 87                      | 0               | 6                  |
|                  | Rajkot       | Nr. Sardhara Industrial Corporation   | 13                                 | 36                          | 21             | 87                      | 0               | 5                  |
|                  |              | GPCB Regional Office  | 12                                 | 40                          | 19             | 87                      | 0               | 6                  |
|                  | Surat        | S.V.R. Engg. College  | 12                                 | 45                          | 23             | 87                      | 0               | 6                  |
|                  |              | B.R.C. High School, Udhna   | 12                                 | 46                          | 26             | 83                      | 0               | 8                  |
|                  |              | Near Air India Office   | 9                                  | 41                          | 22             | 88                      | 0               | 8                  |
|                  | Vadodara     | GPCB Office, Geri Vasahat   | 11                                 | 37                          | 19             | 87                      | 0               | 6                  |
|                  |              | Sterling Gelatin Guest House, Vill-Karakhadi Padia                                | 11                                 | 43                          | 20             | 87                      | 0               | 7                  |
|                  |              | Dandia Bazaar   | 12                                 | 41                          | 20             | 88                      | 0               | 6                  |
|                  |              | CETP Nandesari  | 13                                 | 46                          | 22             | 85                      | 0               | 7                  |
|                  |              | Lubrizol  | 11                                 | 45                          | 21             | 87                      | 0               | 8                  |
|                  | Vapi         | GEB, IIIrd Phase, GIDC  | 9                                  | 38                          | 21             | 86                      | 0               | 6                  |
|                  |              | Vapi Nagar Palika, Vapi   | 9                                  | 35                          | 18             | 87                      | 0               | 7                  |
| Himachal Pradesh | Baddi        | Industry Department Office Building   | 2                                  | 2                           | 2              | 122                     | 0               | 0                  |
|                  |              | AHC barotiwala  | 2                                  | 2                           | 2              | 111                     | 0               | 0                  |
|                  |              | Housing Board   | 2                                  | 2                           | 2              | 52                      | 0               | 0                  |
|                  | Damtal       | Regional Office   | 2                                  | 2                           | 2              | 120                     | 0               | 0                  |
|                  |              | Old Road  | 2                                  | 2                           | 2              | 114                     | 0               | 0                  |
|                  | Dharamshala  | Kotwali Bazar Dharamshala   | 2                                  | 2                           | 2              | 85                      | 0               | 0                  |
|                  |              | Daari, Dharamshala  | 2                                  | 2                           | 2              | 122                     | 0               | 0                  |
|                  | Gulaba       | Behind green tax barrier  | 2                                  | 3                           | 2              | 19                      | 0               | 0                  |
|                  | Kala Amb     | Kala Amb Industrial Area  | 2                                  | 8                           | 3              | 166                     | 0               | 1                  |
|                  |              | Kala Amb Town/Trilokpur   | 2                                  | 8                           | 3              | 161                     | 0               | 1                  |
|                  | Manali       | Nehru Park, Manali, Kullu   | 2                                  | 4                           | 2              | 88                      | 0               | 1                  |
|                  |              | HPSPCB, Hadimba Road, Manali, Kullu   | 2                                  | 2                           | 2              | 72                      | 0               | 0                  |
|                  | Marhi        | Behind Police check post  | 2                                  | 2                           |                | 12                      | 0               | 0                  |
|                  | Nalagarh     | Municipal Council   | 2                                  | 2                           | 2              | 113                     | 0               | 0                  |
|                  | Paonta Sahib | Paonta Sahib  | 2                                  | 8                           | 3              | 165                     | 0               | 1                  |
|                  |              | Gondhpur Industrial Area  | 2                                  | 5                           | 3              | 120                     | 0               | 1                  |
|                  | Parwanoo     | Regional Office, Sector- 4  | 2                                  | 4                           | 2              | 133                     | 0               | 0                  |
|                  |              | Asst. Commissioner Building Sector I  | 2                                  | 4                           | 2              | 121                     | 0               | 0                  |
|                  | Shimla       | Bus Stand, Winterfield  | 2                                  | 7                           | 2              | 203                     | 0               | 1                  |
|                  | Sunder Nagar | HPSPCB, BBMB Colony, Mandi  | 2                                  | 2                           | 2              | 143                     | 0               | 0                  |
|                  |              | Municipal Council, NH-21, Mandi   | 2                                  | 2                           | 2              | 107                     | 0               | 0                  |
|                  | Una          | Regional Office, Una  | 2                                  | 3                           |                | 17                      | 0               | 0                  |
|                  | Vashisht     | Behind pollution check barrier, Bahang / Station No.-II1, Bahang                  | 2                                  | 4                           | 2              | 44                      | 0               | 0                  |
| Jammu & Kashmir  | Jammu        | Regional Office, Jammu  | 2                                  | 5                           | 3              | 66                      | 0               | 1                  |
|                  |              | M.A. Stadium, Jewel Chowk   | 2                                  | 5                           | 3              | 62                      | 0               | 1                  |
|                  |              | Bari Brahamana Industrial Area  | 2                                  | 4                           | 3              | 73                      | 0               | 1                  |
| Jharkhand        | Barajamda    | Barajamda U.M. Office   | 13                                 | 35                          | 17             | 91                      | 0               | 3                  |
|                  | Dhanbad      | R.O. Dhanbad  | 11                                 | 16                          | 14             | 102                     | 0               | 1                  |
|                  |              | EMTI, Bastacola   | 11                                 | 18                          | 13             | 75                      | 0               | 1                  |
|                  |              | CGM Office, Kusunda   | 10                                 | 17                          | 13             | 100                     | 0               | 1                  |
|                  | Jamshedpur   | Bistupur Vehical Testing Centre   | 30                                 | 44                          | 39             | 93                      | 0               | 3                  |
|                  |              | Golmuri Vehicle Testing Centre  | 31                                 | 42                          | 38             | 91                      | 0               | 3                  |
|                  | Jharia       | M.A.D.A.  | 12                                 | 17                          | 14             | 105                     | 0               | 1                  |
|                  | Ranchi       | Albert Ekka Chowk, Main Road  | 11                                 | 27                          | 18             | 96                      | 0               | 1                  |
|                  | Saraikela    | RO Building, Adityapur  | 30                                 | 43                          | 37             | 91                      | 0               | 3                  |
|                  | Sindri       | BIT / PDIL  | 10                                 | 16                          | 13             | 73                      | 0               | 1                  |

Annexure 3: Location wise SO<sub>2</sub> - 2019

| State / UT     | City               | Location   | Concentration in µg/m <sup>3</sup>  |                             |                | No. of days in the year | Standard deviation |   |
|----------------|--------------------|--|-------------------------------------|-----------------------------|----------------|-------------------------|--------------------|---|
|                |                    |  | Minimum (24-hourly average)         | Maximum (24-hourly average) | Annual Average |                         |                    |   |
| Karnataka      | Bangalore          | Bagalkote KSPCB Office Premises                                  | 2                                   | 2                           | 2              | 85                      | 0                  |   |
|                |                    | Graphite India, White Field Road                                 | 2                                   | 2                           | 2              | 83                      | 0                  |   |
|                |                    | AMCO Batteries, Mysore Road                                      | 2                                   | 2                           | 2              | 107                     | 0                  |   |
|                |                    | KHB Industrial Area, Yelahanka                                   | 2                                   | 2                           | 2              | 80                      | 0                  |   |
|                |                    | Peenya Industrial Area   | 2                                   | 2                           | 2              | 52                      | 0                  |   |
|                |                    | Victoria hospital  | 2                                   | 2                           | 2              | 103                     | 0                  |   |
|                |                    | Yeshwanthpura police station                                     | 2                                   | 2                           | 2              | 100                     | 0                  |   |
|                |                    | Jnanabharathi, Bangalore University                              | 4                                   | 12                          | 7              | 102                     | 0                  |   |
|                |                    | RV College of Engineering, Mysore Road                           | 8                                   | 8                           |                | 1                       | 0                  |   |
|                |                    | TERI office, Vital Medi healthcare Pvt Ltd                       | 2                                   | 2                           | 2              | 108                     | 0                  |   |
|                | Belgaum            | Karnataka SPCB Office Building                                   | 2                                   | 9                           | 2              | 52                      | 0                  |   |
|                | Bidar              | KSPCB Office Premises  | 2                                   | 4                           | 2              | 52                      | 0                  |   |
|                | Bijapur            | KSPCB Office Premises  | 2                                   | 2                           | 2              | 38                      | 0                  |   |
|                | Chitradurga        | KSPCB Office Premises  | 2                                   | 20                          | 6              | 105                     | 0                  |   |
|                | Devanagere         | Regional Office building, KSPCB                                  | 2                                   | 20                          | 6              | 94                      | 0                  |   |
|                |                    | Mothi Theatre, Gandhi Circle, P.B. Road / Traffic Police Station | 5                                   | 30                          | 20             | 80                      | 0                  |   |
|                |                    | HPF Intakewell, Kumarapattnam                                    | 2                                   | 13                          | 5              | 102                     | 0                  |   |
|                |                    | Gulburga   | Government Hospital                 | 2                           | 4              | 3                       | 50                 | 0 |
|                |                    | Hassan   | KSRTC bus stand building            | 2                           | 5              | 3                       | 104                | 0 |
|                | Hubli-Dharwad      | Lakkamanahalli Industrial Area, Dharwad                          | 4                                   | 6                           | 4              | 105                     | 0                  |   |
|                |                    | Rani Chennamma Circle, Hubli                                     | 4                                   | 6                           | 5              | 104                     | 0                  |   |
|                |                    | Kolar  | KSPCB Office Premises, Kolar        | 2                           | 2              | 2                       | 98                 | 0 |
|                |                    | Mandy  | KSPCB Building, Bandigowda Badarahe | 2                           | 9              | 2                       | 107                | 0 |
|                |                    | Mangalore  | Baikampady Industrial Area          | 5                           | 9              | 7                       | 92                 | 0 |
|                | Mysore             | K.R.Circle, Visvesvaraya Bldg                                    | 2                                   | 12                          | 2              | 111                     | 0                  |   |
|                |                    | KSPCB Bldg. Hebbal Ind. Area                                     | 10                                  | 10                          |                | 1                       | 0                  |   |
|                |                    | Raichur  | KSPCB Office Premises, Raichur      | 2                           | 7              | 2                       | 77                 | 0 |
|                |                    | Shimoga  | The VISL, Oxygen Plant, Shimoga     | 3                           | 50             | 24                      | 100                | 0 |
|                |                    | Timukuru   | KSPCB Office Premises               | 2                           | 2              | 2                       | 103                | 0 |
| Kerala         | Alappuzha          | District Office, Alissery Road                                   | 2                                   | 2                           | 2              | 107                     | 0                  |   |
|                |                    | DC Mills, Pathirappally  | 2                                   | 2                           | 2              | 25                      | 0                  |   |
|                |                    | William Goodacre Power House Bridge                              | 2                                   | 5                           | 2              | 71                      | 0                  |   |
|                | Kochi              | Eloor I, FACT, Ambalamughal                                      | 2                                   | 5                           | 3              | 107                     | 0                  |   |
|                |                    | Eloor II   | 2                                   | 5                           | 3              | 102                     | 0                  |   |
|                |                    | Irumpanam  | 2                                   | 3                           | 2              | 105                     | 0                  |   |
|                |                    | Ernakulum South  | 2                                   | 2                           | 2              | 65                      | 0                  |   |
|                |                    | VYTILA   | 2                                   | 2                           | 2              | 105                     | 0                  |   |
|                |                    | MG Road Bank Ernakulum   | 2                                   | 2                           | 2              | 105                     | 0                  |   |
|                |                    | KALAMASSERY / CSIR Complex                                       | 2                                   | 3                           | 2              | 103                     | 0                  |   |
|                | Kollam             | Kuttipadam   | 2                                   | 12                          | 5              | 42                      | 0                  |   |
|                |                    | KSPCB, District Office, Kadappakada                              | 2                                   | 3                           | 2              | 110                     | 0                  |   |
|                |                    | KMML Chavara   | 2                                   | 5                           | 3              | 110                     | 0                  |   |
|                | Kottayam           | Kottayam   | 2                                   | 3                           | 2              | 119                     | 0                  |   |
|                |                    | Vadavathoor  | 2                                   | 4                           | 3              | 119                     | 0                  |   |
|                | Kozhikode          | Kozhikode City   | 2                                   | 2                           | 2              | 103                     | 0                  |   |
|                |                    | Nallalam   | 2                                   | 2                           | 2              | 69                      | 0                  |   |
|                | Malapuram          | Kakkanchery, Sijmak oils   | 2                                   | 2                           | 2              | 107                     | 0                  |   |
|                | Palakkad           | SEPR Refractories India Ltd.                                     | 2                                   | 10                          | 2              | 98                      | 0                  |   |
|                | Pathanamthitta     | KSPCB, Makkamkunnu   | 2                                   | 2                           | 2              | 100                     | 0                  |   |
|                | Thiruvananthapuram | PRS Hospital/COSMO   | 3                                   | 20                          | 9              | 105                     | 0                  |   |
|                |                    | SMV School   | 4                                   | 22                          | 9              | 105                     | 0                  |   |
|                |                    | VELI / HiTech Chackai  | 6                                   | 28                          | 10             | 105                     | 0                  |   |
|                |                    | PETTAH / Sasthamangalam(plamadou)                                | 4                                   | 18                          | 8              | 105                     | 0                  |   |
|                | Thissur            | KSPCB, District Office, Poonkunnam                               | 2                                   | 12                          | 3              | 104                     | 0                  |   |
|                |                    | Thissur/ Peringandoor  | 2                                   | 10                          | 3              | 74                      | 0                  |   |
|                | Wayanad            | Sulthan Bathery  | 2                                   | 2                           | 2              | 104                     | 0                  |   |
|                |                    | Wayanad  | 2                                   | 2                           | 2              | 79                      | 0                  |   |
| Madhya Pradesh | Amlai              | HJI  | 10                                  | 19                          | 14             | 60                      | 0                  |   |
|                |                    | OPM  | 9                                   | 16                          | 12             | 69                      | 0                  |   |
|                | Bhopal             | Hamidia Road, MP Hastshilp Vikas Nigam                           | 2                                   | 28                          | 11             | 71                      | 0                  |   |
|                |                    | CETP Govindpura  | 2                                   | 16                          | 9              | 88                      | 0                  |   |
|                |                    | Nutan Subhash School, T.T. Nagar                                 | 2                                   | 5                           | 2              | 36                      | 0                  |   |
|                |                    | Kolar Thana, Kolar Road, Bhopal                                  | 2                                   | 20                          | 10             | 69                      | 0                  |   |

Annexure 3: Location wise SO<sub>2</sub> - 2019

| State / UT | City       | Location   | Concentration in µg/m <sup>3</sup> |                             |                | No. of days in the year |                 | Standard deviation |
|------------|------------|--|------------------------------------|-----------------------------|----------------|-------------------------|-----------------|--------------------|
|            |            |  | Minimum (24-hourly average)        | Maximum (24-hourly average) | Annual Average | Monitored               | Exceeding NAAQS |                    |
|            |            | AKVN Office, Industrial Area Mandideep, Raisen                       | 8                                  | 22                          | 14             | 71                      | 0               | 3                  |
|            |            | Barkatuallah University, Hoshgabad Road, Bhopal                      | 2                                  | 13                          | 7              | 71                      | 0               | 2                  |
|            |            | Main Road, Hemu Colony, Bairagarh, Bhopal                            | 2                                  | 14                          | 8              | 76                      | 0               | 3                  |
|            |            | Arera Colony   | 2                                  | 11                          | 3              | 82                      | 0               | 2                  |
|            | Chhindwara | HIG -33, Front of Geetanali Park Housing Board Colony, Chadagaon     | 2                                  | 6                           | 3              | 96                      | 0               | 1                  |
|            |            | Hindustan Unileaver, Narsinghpur Road,                               | 2                                  | 4                           | 3              | 87                      | 0               | 1                  |
|            | Dewas      | EID Perry (I) Limited  | 9                                  | 33                          | 19             | 94                      | 0               | 6                  |
|            |            | Dewas Metal Section  | 10                                 | 33                          | 19             | 93                      | 0               | 6                  |
|            |            | Vikas Nagar  | 11                                 | 32                          | 20             | 96                      | 0               | 6                  |
|            | Gwalior    | Dindayal Nagar   | 5                                  | 26                          | 12             | 90                      | 0               | 3                  |
|            |            | Maharaj Bada   | 2                                  | 32                          | 13             | 93                      | 0               | 4                  |
|            | Indore     | M.P. Laghu Udyog, Pologround   | 4                                  | 13                          | 9              | 103                     | 0               | 2                  |
|            |            | Kothari Market, M.G. Road  | 3                                  | 20                          | 9              | 109                     | 0               | 2                  |
|            |            | Telephone Nagar, 26 A, Kanadia Road                                  | 5                                  | 12                          | 9              | 109                     | 0               | 2                  |
|            | Jabalpur   | Vijay Nagar  | 2                                  | 2                           | 2              | 101                     | 0               | 0                  |
|            |            | Udaipur Beverage Racchai   | 11                                 | 16                          | 13             | 101                     | 0               | 1                  |
|            | Katni      | HIG-4 Housing Board Colony Jhinjhri, Katni                           | 7                                  | 18                          | 10             | 96                      | 0               | 1                  |
|            |            | Calderys Works Refactories India Private Limited, Guest House, Katni | 8                                  | 12                          | 11             | 72                      | 0               | 1                  |
|            | Nagda      | Chem. D. Labour Club   | 7                                  | 26                          | 14             | 79                      | 0               | 4                  |
|            |            | B C I Labour Club  | 4                                  | 13                          | 8              | 80                      | 0               | 2                  |
|            |            | Grasim Kalyan Kendra   | 5                                  | 17                          | 9              | 75                      | 0               | 2                  |
|            | Prithampur | Vikas Bhavan, Sector-2   | 6                                  | 14                          | 10             | 94                      | 0               | 2                  |
|            |            | RCC Over Head Tank No. 1, Sector-3                                   | 6                                  | 14                          | 10             | 112                     | 0               | 2                  |
|            | Sagar      | Pt.Deendayal Nagar   | 2                                  | 6                           | 4              | 69                      | 0               | 1                  |
|            |            | Katra Bazar, Sagar   | 2                                  | 5                           | 3              | 66                      | 0               | 1                  |
|            | Satna      | Sub-divisional Office E/M Light Machniery                            | 2                                  | 6                           | 4              | 77                      | 0               | 1                  |
|            |            | MPPCB,Dharwari GaliNo.5,House No.318                                 | 2                                  | 6                           | 3              | 75                      | 0               | 1                  |
|            | Singrauli  | Jayant Township  | 18                                 | 61                          | 31             | 83                      | 0               | 8                  |
|            |            | N.T.P.C., Vidyanagar   | 17                                 | 64                          | 31             | 81                      | 0               | 8                  |
|            |            | Waidhan  | 13                                 | 63                          | 30             | 87                      | 0               | 9                  |
|            | Ujjain     | District Office  | 9                                  | 14                          | 11             | 67                      | 0               | 1                  |
|            |            | Regional Office  | 7                                  | 14                          | 10             | 75                      | 0               | 1                  |
|            |            | Mahakal Temple   | 7                                  | 15                          | 11             | 51                      | 0               | 2                  |
|            |            | Chamunda Mata Chouraha   | 8                                  | 15                          | 11             | 49                      | 0               | 1                  |
|            | Akola      | LRT Commerce College, Civil Lines, Akola                             | 11                                 | 14                          | 12             | 88                      | 0               | 1                  |
|            |            | MIDC Water Work, Phash-II, MIDC Akola                                | 11                                 | 18                          | 15             | 143                     | 0               | 2                  |
|            |            | College Of Engineering & Tech, Akola                                 | 11                                 | 18                          | 14             | 196                     | 0               | 2                  |
|            | Ambernath  | Ambernath Municipal Council Office                                   | 12                                 | 47                          | 27             | 131                     | 0               | 8                  |
|            | Amravati   | Apurva Oil Industries, A-23, MIDC                                    | 8                                  | 24                          | 14             | 215                     | 0               | 3                  |
|            |            | Elect. Dept., Govt College Engineering                               | 8                                  | 16                          | 13             | 92                      | 0               | 2                  |
|            |            | Rajkamal Square, Vaneeta Samaj                                       | 8                                  | 24                          | 14             | 154                     | 0               | 3                  |
|            | Aurangabad | S.B.E.S. College   | 6                                  | 24                          | 14             | 144                     | 0               | 5                  |
|            |            | Collector Ofice  | 6                                  | 23                          | 12             | 127                     | 0               | 4                  |
|            |            | C.A.D.A. Ofiice, Garkheda  | 7                                  | 24                          | 14             | 91                      | 0               | 5                  |
|            | Badlapur   | BIWA Office  | 11                                 | 58                          | 27             | 187                     | 0               | 8                  |
|            | Bhiwandi   | Prematail Hall, Near Dhamankar Naka                                  | 22                                 | 44                          | 32             | 101                     | 0               | 4                  |
|            |            | Fire Brigade Office, I.G.M. Hospital                                 | 22                                 | 44                          | 32             | 165                     | 0               | 4                  |
|            |            | Regional Office, M.P.C. Board, Kalyan                                | 22                                 | 44                          | 31             | 237                     | 0               | 5                  |
|            | Chandrapur | Grampanchat Ghughus  | 4                                  | 7                           | 4              | 94                      | 0               | 0                  |
|            |            | M.I.D.C. Chandrapur  | 4                                  | 5                           | 4              | 101                     | 0               | 0                  |
|            |            | Nagar Parishad   | 3                                  | 5                           | 4              | 163                     | 0               | 0                  |
|            |            | Gadchandur Gram Panchayat, Rajura                                    | 4                                  | 5                           | 4              | 97                      | 0               | 0                  |
|            |            | MIDC, Tadali   | 4                                  | 6                           | 4              | 97                      | 0               | 0                  |
|            |            | Municipal Council, Ballarshah  | 4                                  | 5                           | 4              | 99                      | 0               | 0                  |
|            | Dombivali  | Dombivali MIDC Phase-II  | 11                                 | 54                          | 27             | 190                     | 0               | 7                  |
|            | Jalgaon    | B. J. Market   | 9                                  | 16                          | 12             | 94                      | 0               | 1                  |
|            |            | Girna water tank   | 9                                  | 15                          | 12             | 213                     | 0               | 1                  |
|            |            | MIDC Jalgaon   | 9                                  | 15                          | 12             | 154                     | 0               | 2                  |
|            | Jalna      | Bachat Bhawan, Near S P Office                                       | 8                                  | 12                          | 10             | 104                     | 0               | 1                  |
|            |            | Krishidhan Seeds Ltd, MIDC Area                                      | 8                                  | 12                          | 10             | 172                     | 0               | 1                  |

Annexure 3: Location wise SO<sub>2</sub> - 2019

| State / UT  | City             | Location   | Concentration in µg/m <sup>3</sup> |                             |                | No. of days in the year | Standard deviation |    |  |
|-------------|------------------|--|------------------------------------|-----------------------------|----------------|-------------------------|--------------------|----|--|
|             |                  |  | Minimum (24-hourly average)        | Maximum (24-hourly average) | Annual Average |                         |                    |    |  |
| Maharashtra | Kolhapur         | University Campus, Shivaji University                | 7                                  | 19                          | 13             | 80                      | 0                  | 3  |  |
|             |                  | Ruikar Trust, S.T. Stand                             | 7                                  | 41                          | 22             | 147                     | 0                  | 9  |  |
|             |                  | Mahadwar Road, Near Mahalaxmi Temple                 | 7                                  | 41                          | 22             | 203                     | 0                  | 8  |  |
| Maharashtra | Latur            | MIDC Water Works                                     | 4                                  | 7                           | 5              | 239                     | 0                  | 0  |  |
|             |                  | Kshewraj Vidyalaya Shyam nagar                       | 4                                  | 7                           | 5              | 104                     | 0                  | 0  |  |
|             |                  | Sidhheshwar Sahakari Bank Ganjgolai                  | 4                                  | 7                           | 5              | 172                     | 0                  | 0  |  |
| Maharashtra | Mumbai           | Bank of India, Kalbadevi /Branch, Kalbadevi/ VARSOVA | 2                                  | 4                           | 2              | 84                      | 0                  | 0  |  |
|             |                  | Parel TT, Ambedkar Road                              | 2                                  | 4                           | 2              | 88                      | 0                  | 0  |  |
|             |                  | Worli  | 2                                  | 5                           | 2              | 87                      | 0                  | 0  |  |
| Maharashtra | Nagpur           | Institution of Engineers                             | 9                                  | 23                          | 13             | 100                     | 0                  | 3  |  |
|             |                  | Govt. Polytechnic College, Sadar                     | 8                                  | 23                          | 14             | 96                      | 0                  | 3  |  |
|             |                  | MIDC Office Hingana Road                             | 8                                  | 22                          | 14             | 100                     | 0                  | 3  |  |
|             |                  | MIDC Industrial Area, MIDC Office, Hingna            | 2                                  | 24                          | 6              | 82                      | 0                  | 4  |  |
|             |                  | Nagpur Coop Building, Maskasath, Itwari              | 2                                  | 12                          | 5              | 79                      | 0                  | 3  |  |
|             |                  | NEERI Lab, Nehru Marg, Highway No. 7                 | 2                                  | 21                          | 5              | 74                      | 0                  | 4  |  |
|             |                  | MPCB Office Premises, Civil Lines                    | 7                                  | 22                          | 12             | 321                     | 0                  | 3  |  |
| Maharashtra | Nashik           | R.T.O. Colony Tank                                   | 2                                  | 19                          | 10             | 154                     | 0                  | 4  |  |
|             |                  | VIP Industrial Area, MIDC Satpura                    | 2                                  | 17                          | 10             | 104                     | 0                  | 4  |  |
|             |                  | Nashik Municipal Council Building                    | 2                                  | 18                          | 9              | 218                     | 0                  | 4  |  |
|             |                  | MPCB Sub R.O. Udyog Bhawan, Nashik                   | 2                                  | 30                          | 9              | 305                     | 0                  | 4  |  |
| Maharashtra | Navi Mumbai      | T.B.I.A, Rabale Airoli, TTC                          | 13                                 | 23                          | 17             | 103                     | 0                  | 3  |  |
|             |                  | Dr. D.Y. Patil College, Nerul, TTC                   | 13                                 | 23                          | 17             | 229                     | 0                  | 2  |  |
|             |                  | MPCB Lab, Mhape, TTC                                 | 12                                 | 25                          | 17             | 168                     | 0                  | 2  |  |
|             |                  | CIDCO Nodal Office Kharghar                          | 13                                 | 25                          | 18             | 103                     | 0                  | 3  |  |
|             |                  | Water Pump House, Panvel, Taloja                     | 12                                 | 25                          | 17             | 168                     | 0                  | 3  |  |
|             |                  | MIDC Collom Facility Building, Taloja                | 12                                 | 25                          | 17             | 229                     | 0                  | 2  |  |
| Maharashtra | Pimpri-Chinchwad | Bank of Baroda Builing, Near M.C Builiding           | 6                                  | 75                          | 28             | 199                     | 0                  | 11 |  |
|             | Pune             | Maratha Chamber of commerce, Bhosari                 | 14                                 | 90                          | 33             | 62                      | 1                  | 15 |  |
| Maharashtra |                  | State Electricity Board BLDG Nalstop                 | 6                                  | 90                          | 32             | 113                     | 1                  | 15 |  |
|             |                  | Swargate Police Chawki                               | 15                                 | 90                          | 46             | 33                      | 1                  | 16 |  |
|             |                  | Udyog bhavan / SRO, MPCB Sangli                      | 6                                  | 13                          | 9              | 99                      | 0                  | 1  |  |
| Maharashtra | Sangli           | Sangli- Miraj Primary school Building                | 6                                  | 21                          | 10             | 226                     | 0                  | 2  |  |
|             |                  | Krishna Valley School                                | 6                                  | 15                          | 9              | 163                     | 0                  | 2  |  |
|             |                  | WIT Campus   | 11                                 | 21                          | 17             | 102                     | 0                  | 3  |  |
| Maharashtra | Solapur          | Voronoko School / Chitale Clinic                     | 11                                 | 21                          | 16             | 144                     | 0                  | 3  |  |
|             |                  | Maternity Hospital, Dhabighat, Thane East            | 15                                 | 26                          | 19             | 24                      | 0                  | 3  |  |
|             |                  | Shahu Market,Naupada, Thane West                     | 15                                 | 31                          | 21             | 49                      | 0                  | 4  |  |
| Maharashtra | Thane            | Kolshet and Balkum, Thane West                       | 13                                 | 31                          | 20             | 73                      | 0                  | 4  |  |
|             |                  | Smt. C. H. M. College Campus                         | 11                                 | 37                          | 21             | 99                      | 0                  | 5  |  |
|             |                  | Octroi Naka, Pawai-Chowk, Vithalwadi                 | 12                                 | 48                          | 27             | 107                     | 0                  | 7  |  |
| Manipur     | Imphal           | Secretariat Building                                 | 3                                  | 18                          | 9              | 32                      | 0                  | 5  |  |
| Meghalaya   | Byrnihat         | EPIP, Ri-Bhoi district                               | 2                                  | 28                          | 15             | 121                     | 0                  | 9  |  |
|             | Dawki            | Terrace building, Jaintia Hills District             | 2                                  | 24                          | 7              | 121                     | 0                  | 8  |  |
|             | Khliehriat       | O/o BDO, C & R.D. Block-Khliehriat                   | 2                                  | 4                           | 3              | 122                     | 0                  | 1  |  |
|             | Nongstoin        | Office Premises of E.E, PHED                         | 2                                  | 8                           | 2              | 121                     | 0                  | 1  |  |
|             | Shillong         | Boards Office Premises, Lumpyngngad                  | 2                                  | 3                           | 2              | 106                     | 0                  | 0  |  |
|             |                  | State Tuberculosis Hospital                          | 2                                  | 9                           | 6              | 121                     | 0                  | 2  |  |
|             |                  | Forest Rest House, Polo Hills                        | 2                                  | 6                           | 3              | 117                     | 0                  | 1  |  |
|             |                  | 41/2 mile, Mylliem Range Office                      | 2                                  | 6                           | 2              | 119                     | 0                  | 1  |  |
| Meghalaya   | Tura             | PHED, Araisimille, West Garo Hills District          | 2                                  | 4                           | 3              | 116                     | 0                  | 0  |  |
|             | Umiam / Umsning  | Umiam Industrial Complex, Ri-Bhoi District           | 2                                  | 6                           | 3              | 120                     | 0                  | 1  |  |
|             |                  | Khatla, M.G-Road, Mizoram SPCB                       | 2                                  | 2                           | 2              | 103                     | 0                  | 0  |  |
| Mizoram     | Aizawl           | Laipuitlang  | 2                                  | 2                           | 2              | 106                     | 0                  | 0  |  |
|             |                  | Bawngkawn  | 2                                  | 2                           | 2              | 102                     | 0                  | 0  |  |
|             |                  | Dawrpui Y.M.A, Building, Dawrpui                     | 2                                  | 2                           | 2              | 102                     | 0                  | 0  |  |
|             |                  | Lengpui Airport, Model Veng, Lengpui                 | 2                                  | 2                           | 2              | 93                      | 0                  | 0  |  |
|             |                  | D.T.O Office Building, Kahrawt veng                  | 2                                  | 2                           | 2              | 101                     | 0                  | 0  |  |
|             | Champhai         | Lalzidzinga building, Vengthlang                     | 2                                  | 2                           | 2              | 101                     | 0                  | 0  |  |
|             |                  | H. Lalthuama Building, Project Veng                  | 2                                  | 2                           | 2              | 101                     | 0                  | 0  |  |
|             |                  | Synod Bookroom, Building Diakkawn                    | 2                                  | 2                           | 2              | 101                     | 0                  | 0  |  |
|             | Lunglei          | Thangkhuma Building, Salem Veng                      | 2                                  | 2                           | 2              | 96                      | 1                  | 0  |  |

Annexure 3: Location wise SO<sub>2</sub> - 2019

| State / UT | City              | Location  | Concentration in µg/m <sup>3</sup> |                             |                | No. of days in the year |                 | Standard deviation |
|------------|-------------------|---|------------------------------------|-----------------------------|----------------|-------------------------|-----------------|--------------------|
|            |                   |   | Minimum (24-hourly average)        | Maximum (24-hourly average) | Annual Average | Monitored               | Exceeding NAAQS |                    |
| Nagaland   | Dimapur           | K.Lalliantluanga, Chanmari I, Lunglei                             | 2                                  | 2                           | 2              | 96                      | 0               | 0                  |
|            |                   | Bank Colony   | 2                                  | 2                           | 2              | 139                     | 0               | 0                  |
|            |                   | Dhobinala   | 2                                  | 2                           | 2              | 121                     | 0               | 0                  |
|            |                   | Signal point, Dimapur, Nagaland SPCB                              | 2                                  | 2                           | 2              | 103                     | 0               | 0                  |
|            |                   | House no-288, Tenyiphe-I, Chumukiedima, Dimapur                   | 2                                  | 2                           | 2              | 103                     | 0               | 0                  |
|            |                   | Vidya Bhawan School, Lane 17, Nagarjan, Kuda Village, Dimapur     | 2                                  | 2                           | 2              | 48                      | 0               | 0                  |
|            |                   | House no 24, Near community Hall, Viola colony, Dimapur           | 2                                  | 2                           | 2              | 48                      | 0               | 0                  |
|            |                   | ERJO Motors, Burma Camp, Dimapur                                  | 2                                  | 2                           | 2              | 48                      | 0               | 0                  |
|            | Kohima            | Opposite NST Office   | 2                                  | 2                           | 2              | 138                     | 0               | 0                  |
|            |                   | Opposite War Cemetery   | 2                                  | 2                           | 2              | 121                     | 0               | 0                  |
| Odisha     | Angul             | Industrial Estate   | 6                                  | 19                          | 11             | 102                     | 0               | 3                  |
|            |                   | NALCO Township  | 8                                  | 15                          | 10             | 102                     | 0               | 1                  |
|            | Balasore          | Sahadevkhunta   | 2                                  | 2                           | 2              | 104                     | 0               | 0                  |
|            |                   | DIC office  | 2                                  | 2                           | 2              | 104                     | 0               | 0                  |
|            |                   | Rasalpur near Balgopalpur I/A                                     | 6                                  | 9                           | 7              | 105                     | 0               | 0                  |
|            | Berhampur         | Regional Office Orissa SPCB                                       | 2                                  | 11                          | 4              | 107                     | 0               | 1                  |
|            | Bhubneshwar       | Capital Police Station  | 2                                  | 7                           | 2              | 97                      | 0               | 1                  |
|            |                   | IRC Village   | 2                                  | 5                           | 2              | 95                      | 0               | 0                  |
|            |                   | Office Premises Bhubaneswar                                       | 2                                  | 4                           | 2              | 100                     | 0               | 0                  |
|            |                   | Water works, Palasuni, Rasalgarh                                  | 2                                  | 7                           | 2              | 69                      | 0               | 1                  |
|            |                   | Patrapara, Khandagiri   | 2                                  | 5                           | 2              | 101                     | 0               | 0                  |
|            |                   | Chandrashekharpur   | 2                                  | 6                           | 2              | 91                      | 0               | 0                  |
|            | Bonaigarh         | Govt. Hospital Bonai At/Po/PS-Bonai Dist-Sudargarh                | 5                                  | 17                          | 9              | 104                     | 0               | 3                  |
|            | Cuttack           | Traffic Tower, Badambadi  | 3                                  | 8                           | 5              | 57                      | 0               | 1                  |
|            |                   | P.H.D Office Barabati   | 2                                  | 35                          | 6              | 104                     | 0               | 7                  |
|            |                   | R.O. Cuttack Office, Surya Vihar                                  | 3                                  | 10                          | 6              | 104                     | 0               | 2                  |
|            | Jharsuguda        | R.O. Building Cox colony  | 6                                  | 29                          | 7              | 108                     | 0               | 2                  |
|            |                   | TRL Colony, M/s. TRL Krosaki Refractories Ltd. PO: Bhepahar,      | 5                                  | 23                          | 8              | 106                     | 0               | 2                  |
|            | Kalinga Nagar     | Over the Guest House of M/s NINL                                  | 2                                  | 2                           | 2              | 55                      | 0               | 0                  |
|            |                   | Maintenance Office of M/s NINL, Duburi                            | 2                                  | 2                           | 2              | 77                      | 0               | 0                  |
|            | Konark            | Konark Police Station   | 2                                  | 3                           | 2              | 101                     | 0               | 0                  |
|            | Paradeep          | On roof of PPT Staff Quarter                                      | 10                                 | 30                          | 18             | 101                     | 0               | 3                  |
|            |                   | On roof of PPL Gueest   | 9                                  | 26                          | 18             | 101                     | 0               | 3                  |
|            |                   | On roof of STP building IFFCO                                     | 14                                 | 27                          | 19             | 83                      | 0               | 2                  |
|            | Puri              | Sadar police station  | 2                                  | 2                           | 2              | 46                      | 0               | 0                  |
|            |                   | Town Police Station   | 2                                  | 6                           | 2              | 75                      | 0               | 0                  |
|            | Rajgangpur        | DISIR, Rajgangpur   | 6                                  | 23                          | 12             | 103                     | 0               | 5                  |
|            | Rayagada          | Regional Office Orissa SPCB                                       | 2                                  | 12                          | 4              | 104                     | 0               | 1                  |
|            |                   | LPS High School, Jaykaypur  | 2                                  | 9                           | 4              | 101                     | 0               | 1                  |
|            | Rourkela          | Regional Office, ORPB   | 5                                  | 16                          | 8              | 104                     | 0               | 1                  |
|            |                   | Kalunga Industrial Estate   | 6                                  | 16                          | 12             | 104                     | 0               | 3                  |
|            |                   | IDL Police Out-post, Sonaparbat                                   | 5                                  | 10                          | 6              | 104                     | 0               | 1                  |
|            |                   | Kuarmunda, Sundergarh   | 4                                  | 14                          | 8              | 104                     | 0               | 2                  |
|            | Sambalpur         | Filter Plant, PHD Office, Modipara                                | 4                                  | 36                          | 6              | 105                     | 0               | 3                  |
|            | Talcher           | Coal Field Area   | 8                                  | 14                          | 10             | 104                     | 0               | 1                  |
|            |                   | T.T.P.S.Colony  | 6                                  | 14                          | 11             | 104                     | 0               | 2                  |
| Puducherry | Karaikal          | B.Ed College (PKCE), Nehru Nagar                                  | 2                                  | 3                           | 2              | 89                      | 0               | 0                  |
|            |                   | Govt. Tourist Home, Kovilpathu                                    | 2                                  | 3                           | 2              | 91                      | 0               | 0                  |
|            |                   | M/s Puducherry Power Corporation Limited, Polagam, T.R. Pattinam, | 2                                  | 3                           | 2              | 82                      | 0               | 0                  |
|            | Puducherry        | DSTC Office Upstairs, PHB 3rd Floor, AnnaNagar                    | 3                                  | 6                           | 5              | 92                      | 0               | 1                  |
|            |                   | PIPDIC Ind. Estate Mettupalayam                                   | 4                                  | 6                           | 5              | 87                      | 0               | 1                  |
|            |                   | Chamber Of Commerce   | 2                                  | 6                           | 4              | 85                      | 0               | 1                  |
| Punjab     | Aligarh (Jagraon) | Forest Office, Vill:Aligarh, Teh:Jagraon                          | 4                                  | 12                          | 6              | 103                     | 0               | 2                  |
|            | Amritsar          | R.O. Focal Point (earlier Nagina soap factory)                    | 11                                 | 14                          | 13             | 62                      | 0               | 1                  |
|            |                   | Vinod Chilling Center / Kochar Bhavan (earlier A-1,Platers)       | 11                                 | 19                          | 13             | 60                      | 0               | 1                  |

Annexure 3: Location wise SO<sub>2</sub> - 2019

| State / UT | City                          | Location   | Concentration in µg/m <sup>3</sup> |                                   |                   | No. of days in the year |                    | Standard deviation |
|------------|-------------------------------|--|------------------------------------|-----------------------------------|-------------------|-------------------------|--------------------|--------------------|
|            |                               |  | Minimum<br>(24-hourly<br>average)  | Maximum<br>(24-hourly<br>average) | Annual<br>Average | Monitored               | Exceeding<br>NAAQS |                    |
| Punjab     | Aspal Khurd<br>(Tapa)         | Vill:Aspal Khurd, Teh:Tapa   | 4                                  | 8                                 | 5                 | 123                     | 0                  | 1                  |
|            | Bara Pind<br>(Goraya)         | Vill:Bara Pind, Teh:Goraya   | 4                                  | 11                                | 7                 | 83                      | 0                  | 1                  |
|            | Bhatinda                      | Bathinda Milk Producers, Dabwali Road  | 2                                  | 8                                 | 5                 | 81                      | 0                  | 1                  |
|            | Binjon<br>(Garshankar)        | CHC, Vill:Binjon, Teh: Garshankar  | 4                                  | 24                                | 7                 | 80                      | 0                  | 2                  |
|            | Bishanpura<br>(Payal)         | Longowalia Yarns (Unit-II), Vill:Bishanpura,<br>Teh: Payal                       | 4                                  | 20                                | 10                | 93                      | 0                  | 4                  |
|            | Changal<br>(Sangrur)          | Mastuana Sahib, Vill:Changal, Teh:Sangrur  | 4                                  | 7                                 | 5                 | 107                     | 0                  | 1                  |
|            | Chowkimann<br>(Jagraon)       | Ludhiana College of Engineering,<br>Vill:Chowkimann, Teh:Jagraon                 | 4                                  | 12                                | 7                 | 102                     | 0                  | 1                  |
|            | Dera Baba Nanak               | C-PYTE Building  | 3                                  | 9                                 | 7                 | 68                      | 0                  | 1                  |
|            | Dera Bassi                    | Punjab Chem and Crop Protection,<br>Bhanakpur Rd                                 | 4                                  | 8                                 | 6                 | 107                     | 0                  | 1                  |
|            |                               | Winsome Yarns Ltd., Barwala Road   | 4                                  | 7                                 | 5                 | 113                     | 0                  | 1                  |
|            | Fatehpur<br>(Samana)          | Baba Banda Singh Bahadur College,<br>Vill:Fatehpur, Teh:Samana                   | 4                                  | 7                                 | 5                 | 38                      | 0                  | 1                  |
|            | Gobindgarh                    | Modi Oil and General Mills, Mandi  | 6                                  | 9                                 | 7                 | 126                     | 0                  | 1                  |
|            |                               | Raj Steel Rolling Mills, Mandi   | 5                                  | 9                                 | 7                 | 133                     | 0                  | 1                  |
|            |                               | United Rolling Mills, Mandi Gobindgarh   | 5                                  | 9                                 | 7                 | 130                     | 0                  | 1                  |
|            | Guru Ki Dhab<br>(Kotkapura)   | Vil:Guru Ki Dhab / Basti Himmatpura,<br>Teh:Kotkapura                            | 2                                  | 8                                 | 5                 | 22                      | 0                  | 2                  |
|            | Jaito Sarja<br>(Batala)       | Royal Nursing College, Vill: Jaito Sarja, Teh:<br>Batala                         | 4                                  | 7                                 | 6                 | 37                      | 0                  | 1                  |
|            | Jalandhar                     | Municipal Council Tubewell No. 27  | 8                                  | 24                                | 12                | 81                      | 0                  | 2                  |
|            |                               | Regional Office  | 9                                  | 23                                | 11                | 73                      | 0                  | 2                  |
|            |                               | Punjab Maltex , Kapurthala Road  | 5                                  | 20                                | 10                | 59                      | 0                  | 3                  |
|            |                               | Focal Point  | 8                                  | 15                                | 12                | 63                      | 0                  | 1                  |
|            | Khanna                        | Markfed Vanaspati, Khanna  | 5                                  | 25                                | 10                | 112                     | 0                  | 3                  |
|            |                               | AS School, Khanna  | 5                                  | 64                                | 13                | 117                     | 0                  | 11                 |
|            | Kharaori<br>(Sirhind)         | Vill:Kharaori, Teh:Sirhind   | 4                                  | 8                                 | 6                 | 126                     | 0                  | 1                  |
|            | Kotladoom<br>(Ajnala)         | Satyam College, Ramtirath Road, Vill:<br>Kotladoom, Teh: Ajnala                  | 5                                  | 8                                 | 7                 | 62                      | 0                  | 1                  |
|            | Lakho ke Behram<br>(Ferozpur) | Vill:Lakho ke Behram, Teh:Ferozpur   | 3                                  | 6                                 |                   | 11                      | 0                  | 1                  |
|            | Ludhiana                      | Bharat Nagar Chowk / RO Gill Road  | 6                                  | 20                                | 11                | 120                     | 0                  | 3                  |
|            |                               | Nahar Spining Mills, Dholewal Chawk  | 6                                  | 49                                | 14                | 124                     | 0                  | 7                  |
|            |                               | Ludhiana Coop. Milk Producer, Ferozpur Rd  | 5                                  | 40                                | 10                | 136                     | 0                  | 7                  |
|            |                               | PPCB Office Building, Vishav karma Chowk   | 6                                  | 64                                | 13                | 131                     | 0                  | 9                  |
|            | Mrar Kalan<br>(Muktsar)       | Vill: Mrar Kalan, Teh:Muktsar  | 4                                  | 9                                 | 5                 | 40                      | 0                  | 1                  |
|            | Mukandpur<br>(Nawashahar)     | Govt. Senior Sec. School, Vill:Mukandpur,<br>Teh:Nawashahar                      | 5                                  | 12                                | 8                 | 78                      | 0                  | 1                  |
|            | Mureedke<br>(Batala)          | Johal Farm, Vill: Mureedke, Teh: Batala  | 4                                  | 10                                | 7                 | 98                      | 0                  | 1                  |
|            | Naudhrani<br>(Malerkotla)     | Vill:Naudhrani, Teh:Malerkotla   | 4                                  | 8                                 | 5                 | 106                     | 0                  | 1                  |
|            | Naya Nangal                   | Punjab Alkalies & Chemicals Ltd  | 5                                  | 8                                 | 6                 | 92                      | 0                  | 1                  |
|            |                               | M/s NFL Guest House,Naya Nangal  | 4                                  | 7                                 | 5                 | 104                     | 0                  | 1                  |
|            | Patiala                       | Ceylon Industries, Factory Area, Patiala   | 4                                  | 7                                 | 5                 | 130                     | 0                  | 1                  |
|            |                               | Fire Brigade Station, Bahera Road, Patiala                                       | 4                                  | 8                                 | 5                 | 134                     | 0                  | 1                  |
|            | Peer Mohammad<br>(Jalalabad)  | Vill:Peer Mohammad, Teh:Jalalabad  | 4                                  | 6                                 | 5                 | 26                      | 0                  | 1                  |
|            | Poohli (Bhatinda)             | Vill: Poohli, Teh:Bhatinda   | 4                                  | 7                                 | 5                 | 21                      | 0                  | 1                  |
|            | Qila Bharian<br>(Sangrur)     | Gurdwara Gangsar Sahib, Vill:Qila Bharian,<br>Teh:Sangrur                        | 4                                  | 8                                 | 5                 | 112                     | 0                  | 1                  |
|            | Rakhra (Patiala)              | Shree Ganesh Group of Institute,<br>Vill:Rakhra, The:Patiala                     | 5                                  | 7                                 | 5                 | 53                      | 0                  | 1                  |
|            | Rohila (Samrala)              | Gopimal Kaur Sain Industries Pvt. Ltd,<br>Vil:Rohila, Teh:Samrala                | 5                                  | 19                                | 10                | 120                     | 0                  | 3                  |
|            | Tirathpur<br>(Amritsar I)     | United ITI, Vill: Tirathpur, Teh:Amritsar I<br>(earlier Sriguru Harkishan Public | 5                                  | 8                                 | 7                 | 58                      | 0                  | 1                  |

| State / UT | City        | Location   | Concentration in µg/m <sup>3</sup> |                             |                | No. of days in the year |                 | Standard deviation |
|------------|-------------|--|------------------------------------|-----------------------------|----------------|-------------------------|-----------------|--------------------|
|            |             |  | Minimum (24-hourly average)        | Maximum (24-hourly average) | Annual Average | Monitored               | Exceeding NAAQS |                    |
|            |             | School,Rasulpur Kalan)                                       |                                    |                             |                |                         |                 |                    |
|            | Alwar       | Rajasthan State Pollution Control Board                      | 6                                  | 13                          | 9              | 98                      | 0               | 2                  |
|            |             | Gaurav Solvex Ltd. MIA                                       | 8                                  | 18                          | 13             | 103                     | 0               | 2                  |
|            |             | RIICO Pump House, MIA  | 8                                  | 17                          | 12             | 105                     | 0               | 2                  |
|            | Bharatpur   | Khadi Gramoday Samiti  | 7                                  | 12                          | 8              | 98                      | 0               | 1                  |
|            |             | RIICO office Building  | 6                                  | 10                          | 7              | 100                     | 0               | 0                  |
|            |             | RO, Building   | 7                                  | 8                           | 7              | 102                     | 0               | 0                  |
|            | Bhiwadi     | R.O.Building   | 8                                  | 63                          | 28             | 101                     | 0               | 7                  |
|            |             | UIT Guest House  | 7                                  | 33                          | 24             | 38                      | 0               | 7                  |
|            |             | Uttam Strips Ltd   | 6                                  | 40                          | 25             | 97                      | 0               | 8                  |
|            | Chittorgarh | Regional Office building, RSPCB, Near FCI Godown, Chnaderiya | 5                                  | 20                          | 8              | 102                     | 0               | 2                  |
|            |             | Veterinary Hospital, Meeranagar                              | 5                                  | 16                          | 7              | 97                      | 0               | 2                  |
|            |             | PHED Pump House, Segawa                                      | 4                                  | 14                          | 6              | 97                      | 0               | 1                  |
| Rajasthan  | Jaipur      | Ajmeri Gate  | 5                                  | 15                          | 7              | 107                     | 0               | 1                  |
|            |             | RJPB Office,Jhalana Doongari                                 | 4                                  | 12                          | 6              | 104                     | 0               | 1                  |
|            |             | District Education Officer, Chandpole                        | 6                                  | 23                          | 7              | 101                     | 0               | 2                  |
|            |             | RIICO Office, M.I.A.   | 5                                  | 14                          | 6              | 104                     | 0               | 1                  |
|            |             | RSPCB, Vidyadhar Nagar                                       | 5                                  | 27                          | 7              | 104                     | 0               | 2                  |
|            |             | VKIA   | 5                                  | 31                          | 10             | 104                     | 0               | 4                  |
|            |             | 22,Godam, RIICO Office                                       | 5                                  | 10                          | 6              | 107                     | 0               | 1                  |
|            |             | Mansarovar Nagar Niigam                                      | 5                                  | 10                          | 6              | 99                      | 0               | 1                  |
|            |             | RIICO Office Sitapura Industrial Area                        | 4                                  | 16                          | 7              | 103                     | 0               | 2                  |
|            |             | DIC Office, Industrial Estate                                | 3                                  | 23                          | 7              | 86                      | 0               | 3                  |
|            | Jodhpur     | Sojati Gate  | 4                                  | 12                          | 7              | 80                      | 0               | 2                  |
|            |             | Basni Industrial Area, RIICO Office                          | 3                                  | 13                          | 7              | 87                      | 0               | 2                  |
|            |             | Maha Mandir Police Thane                                     | 4                                  | 10                          | 7              | 84                      | 0               | 2                  |
|            |             | Office of Housing Board, Chopasani Road                      | 3                                  | 11                          | 7              | 82                      | 0               | 2                  |
|            |             | Shastri Nagar Police Thana                                   | 3                                  | 12                          | 7              | 87                      | 0               | 2                  |
|            |             | Kudi Mahila Thana  | 5                                  | 8                           | 6              | 50                      | 0               | 1                  |
|            |             | Sangariya Police Choki                                       | 5                                  | 9                           | 6              | 47                      | 0               | 1                  |
|            |             | SoorsagarThana   | 5                                  | 9                           | 6              | 47                      | 0               | 1                  |
|            |             | Regional Office, RJPB, Anantpura                             | 5                                  | 11                          | 7              | 99                      | 0               | 1                  |
|            |             | Municipal Corporation Building                               | 5                                  | 11                          | 7              | 104                     | 0               | 1                  |
|            | Kota        | Samcore Glass Ltd.   | 5                                  | 13                          | 7              | 109                     | 0               | 1                  |
|            |             | FireStation Nagar Nigam Shrinathpuram                        | 5                                  | 11                          | 7              | 104                     | 0               | 2                  |
|            |             | RajasthanTechnical University,Rawatbhata                     | 5                                  | 12                          | 7              | 103                     | 0               | 2                  |
|            |             | Sewage Treatment Plant, Balita, Kota                         | 5                                  | 9                           | 6              | 107                     | 0               | 1                  |
|            |             | Ambamata   | 3                                  | 13                          | 6              | 103                     | 0               | 2                  |
|            | Udaipur     | Town Hall  | 4                                  | 23                          | 13             | 105                     | 0               | 5                  |
|            |             | Regional Office,MIA  | 5                                  | 26                          | 14             | 104                     | 0               | 5                  |
|            |             | Chungthang   | 3                                  | 10                          | 5              | 90                      | 0               | 1                  |
| Sikkim     | Gangtok     | White Hall Complex, Tasi view point                          | 4                                  | 10                          | 6              | 77                      | 0               | 1                  |
|            | Mangan      | Mangan Police Station  | 3                                  | 7                           | 5              | 101                     | 0               | 1                  |
|            | Namchi      | Namchi   | 4                                  | 7                           | 6              | 99                      | 0               | 1                  |
|            | Pelling     | The Pelling Girls Hostel                                     | 2                                  | 11                          | 5              | 94                      | 0               | 2                  |
|            | Rangpo      | Rangpo Fire Station  | 3                                  | 16                          | 8              | 94                      | 0               | 3                  |
|            | Ravangla    | Ravangla Range Office  | 2                                  | 28                          | 5              | 99                      | 0               | 3                  |
|            | Singtam     | Police Station Building                                      | 4                                  | 8                           | 6              | 93                      | 0               | 1                  |
|            |             | Govt. High School, Manali                                    | 12                                 | 18                          | 15             | 58                      | 0               | 2                  |
| Tamilnadu  | Chennai     | Kathivakkam  | 11                                 | 17                          | 14             | 63                      | 0               | 1                  |
|            |             | Thiruvottiyur  | 11                                 | 16                          | 14             | 62                      | 0               | 1                  |
|            |             | Madras Medical College                                       | 2                                  | 22                          | 3              | 86                      | 0               | 3                  |
|            |             | NEERI, CSIR CampusTaramani                                   | 2                                  | 6                           | 2              | 86                      | 0               | 1                  |
|            |             | Thiruvottiyur Municipal Office                               | 2                                  | 50                          | 5              | 87                      | 0               | 6                  |
|            |             | Adiyar   | 5                                  | 13                          | 8              | 57                      | 0               | 1                  |
|            |             | Kilpauk  | 8                                  | 13                          | 10             | 66                      | 0               | 1                  |
|            |             | Thiyagaraya Nagar  | 8                                  | 16                          | 11             | 68                      | 0               | 1                  |
|            |             | Nunbakgum  | 8                                  | 14                          | 11             | 63                      | 0               | 1                  |
|            |             | Anna Nagar   | 8                                  | 14                          | 10             | 53                      | 0               | 1                  |
|            | Coimbatore  | Poniarajapuram, On the top of DEL                            | 4                                  | 72                          | 6              | 86                      | 0               | 7                  |
|            |             | G.D.Matric Hr.Sec.School                                     | 4                                  | 9                           | 6              | 69                      | 0               | 1                  |
|            |             | SIDCO Office, Coimbatore/ Kurichi                            | 5                                  | 9                           | 7              | 77                      | 0               | 1                  |
|            |             | Cuddalore  | 11                                 | 15                          | 13             | 94                      | 0               | 1                  |

Annexure 3: Location wise SO<sub>2</sub> - 2019

| State / UT    | City       | Location  | Concentration in µg/m <sup>3</sup> |                                   |                   | No. of days in the year | Standard deviation |   |
|---------------|------------|---|------------------------------------|-----------------------------------|-------------------|-------------------------|--------------------|---|
|               |            |   | Minimum<br>(24-hourly<br>average)  | Maximum<br>(24-hourly<br>average) | Annual<br>Average |                         |                    |   |
|               |            | SIPCOT (Project Office)   | 9                                  | 13                                | 11                | 82                      | 0                  | 1 |
|               |            | DEE Office, Cuddalore   | 12                                 | 18                                | 15                | 75                      | 0                  | 1 |
|               | Madurai    | Highway (Project -I) Building   | 9                                  | 14                                | 12                | 70                      | 0                  | 1 |
|               |            | Fenner (I) Ltd. Kochadai  | 10                                 | 16                                | 13                | 67                      | 0                  | 1 |
|               | Mettur     | Kunnathur Chatram Avvai Girls HS School                               | 10                                 | 16                                | 13                | 75                      | 0                  | 1 |
|               |            | Raman Nagar   | 5                                  | 10                                | 6                 | 79                      | 0                  | 1 |
|               | Salem      | SIDCO   | 5                                  | 9                                 | 6                 | 77                      | 0                  | 1 |
|               |            | Sowdeswari College Building   | 4                                  | 26                                | 7                 | 77                      | 0                  | 3 |
|               | Trichy     | Gandhi Market   | 8                                  | 16                                | 13                | 68                      | 0                  | 2 |
|               |            | Main Guard Gate   | 10                                 | 19                                | 15                | 67                      | 0                  | 2 |
|               |            | Bishop Heber College  | 9                                  | 15                                | 11                | 75                      | 0                  | 1 |
|               |            | Golden Rock   | 8                                  | 14                                | 12                | 72                      | 0                  | 1 |
|               |            | Central Bus Stand   | 10                                 | 19                                | 15                | 69                      | 0                  | 2 |
|               | Tuticorin  | Fisheries College, Tuticorin Sipcot                                   | 6                                  | 16                                | 10                | 72                      | 0                  | 2 |
|               |            | Raja Agencies   | 9                                  | 15                                | 12                | 66                      | 0                  | 1 |
|               |            | AVM Jewellery Building  | 7                                  | 16                                | 10                | 83                      | 0                  | 2 |
|               | Adilabad   | Building of SCCL Manadamarri Club<br>Manadamarri, Mancherial          | 4                                  | 7                                 | 5                 | 108                     | 0                  | 1 |
|               | Hyderabad  | Balanagar   | 4                                  | 11                                | 6                 | 106                     | 0                  | 1 |
|               |            | Tarnaka, NEERI Lab. IICT Campus                                       | 2                                  | 9                                 | 5                 | 88                      | 0                  | 2 |
|               |            | Nacharam, Industrial Estate   | 2                                  | 9                                 | 5                 | 88                      | 0                  | 2 |
|               |            | ABIDS Circle General Post Office                                      | 2                                  | 9                                 | 5                 | 88                      | 0                  | 2 |
|               |            | Uppal, Modern Foods & Industries IDA                                  | 4                                  | 10                                | 6                 | 112                     | 0                  | 1 |
|               |            | Jubilee Hills   | 4                                  | 11                                | 5                 | 119                     | 0                  | 1 |
|               |            | Paradise  | 4                                  | 13                                | 6                 | 119                     | 0                  | 1 |
|               |            | Charminar   | 3                                  | 10                                | 5                 | 119                     | 0                  | 1 |
|               |            | Zoo Park  | 2                                  | 9                                 | 4                 | 85                      | 0                  | 1 |
|               |            | Jeedimetla Industrial Estate, Rangareddy<br>Distt.                    | 3                                  | 11                                | 6                 | 119                     | 0                  | 1 |
|               | Karimnagar | On the terrace of the DIC building,<br>Karimnagar                     | 6                                  | 14                                | 9                 | 87                      | 0                  | 2 |
| Telangana     | Khammam    | CER Club Khamam   | 7                                  | 14                                | 9                 | 100                     | 0                  | 1 |
|               |            | Jalasoudha building   | 6                                  | 11                                | 9                 | 102                     | 0                  | 1 |
|               | Kothur     | Mehaboobnagar   | 7                                  | 13                                | 9                 | 104                     | 0                  | 1 |
|               | Nalgonda   | AP PCB Nalgonda   | 3                                  | 7                                 | 5                 | 99                      | 0                  | 1 |
|               |            | M/s. Sriniv Pharmaceuticals pvt.<br>Ltd.Choutuppal (V & M)            | 4                                  | 7                                 | 6                 | 99                      | 0                  | 1 |
|               | Nizamabad  | subashnagar,nizamabad dist  | 4                                  | 6                                 | 5                 | 99                      | 0                  | 0 |
|               | Patncheru  | Police Station, Medak, Ramachadrapuram                                | 4                                  | 7                                 | 5                 | 93                      | 0                  | 1 |
|               | Ramagundam | Godavarikhani, Ramagundam, Karimnagar                                 | 7                                  | 13                                | 9                 | 98                      | 0                  | 2 |
|               | Sangareddy | Pashamylaram/Municipal Office   | 2                                  | 52                                | 8                 | 118                     | 0                  | 9 |
|               |            | Regional office Building of SANGAREDDY                                | 3                                  | 6                                 | 5                 | 98                      | 0                  | 0 |
|               |            | M/s. Mylan Industries, Gaddapothara                                   | 5                                  | 7                                 | 6                 | 99                      | 0                  | 1 |
|               | Warangal   | KUDA Office, Hanumakonda  | 6                                  | 11                                | 9                 | 99                      | 0                  | 1 |
|               |            | Mee-Seva Building ,Municipal Complex                                  | 6                                  | 11                                | 9                 | 98                      | 0                  | 1 |
| Tripura       | Agartala   | SPCB, Pavivesh Bhawan, Pandit Nehru<br>Complex, Gorkhabasti, Kunjaban | 2                                  | 6                                 | 4                 | 83                      | 0                  | 1 |
|               |            | Bordowali Bipani Bitan, Agartala MC,<br>Bordowali, Near Nagerjala     | 2                                  | 6                                 | 4                 | 83                      | 0                  | 1 |
| Uttar Pradesh | Agra       | Regional Office, Bodla  | 3                                  | 6                                 | 4                 | 90                      | 0                  | 1 |
|               |            | Nunhai  | 3                                  | 12                                | 5                 | 94                      | 0                  | 2 |
|               |            | Taj Mahal   | 2                                  | 34                                | 4                 | 242                     | 0                  | 4 |
|               |            | DIC Nunhai  | 2                                  | 21                                | 4                 | 125                     | 0                  | 3 |
|               |            | Etmad-uddaulah  | 2                                  | 35                                | 4                 | 130                     | 0                  | 4 |
|               | Allahabad  | Rambagh   | 2                                  | 20                                | 4                 | 124                     | 0                  | 3 |
|               |            | Square crossing circle of Laxmi Talkies                               | 2                                  | 16                                | 9                 | 92                      | 0                  | 4 |
|               |            | Bharat Yantra Nigam Ltd   | 2                                  | 19                                | 8                 | 102                     | 0                  | 4 |
|               |            | Alopibagh/Sewage Pumping Stations                                     | 2                                  | 5                                 | 3                 | 92                      | 0                  | 1 |
|               |            | Jhonstonganj/co-operative Bank  | 2                                  | 3                                 | 2                 | 57                      | 0                  | 0 |
|               | Anpara     | Rambagh/Parag Dairy   | 2                                  | 5                                 | 3                 | 82                      | 0                  | 1 |
|               |            | Anpara Colony, Sonabhadra   | 10                                 | 22                                | 17                | 95                      | 0                  | 2 |
|               | Baghpat    | Renusagar Colony, Sonabhadra  | 11                                 | 21                                | 17                | 97                      | 0                  | 2 |
|               |            | Sarvodaya Hospital, Tatiri Merrut, Baghpat<br>Road                    | 6                                  | 37                                | 11                | 93                      | 0                  | 4 |

Annexure 3: Location wise SO<sub>2</sub> - 2019

| State / UT | City          | Location  | Concentration in µg/m <sup>3</sup> |                             |                | No. of days in the year | Standard deviation |
|------------|---------------|---|------------------------------------|-----------------------------|----------------|-------------------------|--------------------|
|            |               |   | Minimum (24-hourly average)        | Maximum (24-hourly average) | Annual Average |                         |                    |
|            |               | Weavetex Overseas Hostel, Khekra, Baghpat                           | 7                                  | 37                          | 11             | 96                      | 0                  |
|            | Bareily       | IVRI Izatnaga   | 10                                 | 45                          | 22             | 107                     | 0                  |
|            |               | Indian oetrol pump, Civil Line                                      | 13                                 | 62                          | 31             | 107                     | 0                  |
|            | Firozabad     | Center for Development of Glass Industry                            | 6                                  | 12                          | 8              | 104                     | 0                  |
|            |               | Tilak Nagar   | 6                                  | 12                          | 8              | 104                     | 0                  |
|            |               | Raza ka Tal   | 6                                  | 12                          | 8              | 103                     | 0                  |
|            | Gajraula      | Raunaq Auto Ltd, J.P. Nagar   | 8                                  | 43                          | 22             | 94                      | 0                  |
|            |               | Indira Chowk, J.P. Nagar  | 10                                 | 50                          | 28             | 91                      | 0                  |
|            | Ghaziabad     | Atlas Cycles Industries, Sahibabad Ind. area                        | 5                                  | 30                          | 15             | 93                      | 0                  |
|            |               | Bulandshaar Road Industrial Area                                    | 5                                  | 26                          | 13             | 87                      | 0                  |
|            |               | Khora Colony, Ghaziabad   | 7                                  | 35                          | 12             | 86                      | 0                  |
|            |               | Vinoba Bhave Park, Lohia Nagar, Ghaziabad                           | 7                                  | 30                          | 12             | 85                      | 0                  |
|            | Gorakpur      | M. M. M. Engineering College, Gorakhpur                             | 2                                  | 26                          | 10             | 93                      | 0                  |
|            |               | India Glycol Ltd. Gida, Gorakhpur                                   | 18                                 | 62                          | 33             | 101                     | 0                  |
|            |               | Jalkal, Municipal Corporation, Golghar                              | 9                                  | 55                          | 24             | 92                      | 0                  |
|            | Greater Noida | Holland Tractor, Greater Noida                                      | 6                                  | 48                          | 12             | 88                      | 0                  |
|            |               | Honda Power, Greater Noida  | 6                                  | 48                          | 12             | 88                      | 0                  |
|            | Hapur         | Srinagar Colony, Railway Road, Hapur                                | 5                                  | 28                          | 13             | 89                      | 0                  |
|            |               | Jindal Pipes Ltd, Hapur   | 5                                  | 28                          | 16             | 70                      | 0                  |
|            | Jhansi        | Manik Chawk / Jal chauraha  | 4                                  | 20                          | 7              | 117                     | 0                  |
|            |               | Veeranga Nagar  | 3                                  | 18                          | 6              | 117                     | 0                  |
|            | Kanpur        | Forest & Training Centre, Kidwai Nagar                              | 6                                  | 20                          | 8              | 93                      | 0                  |
|            |               | Chamber Of Commerce Darshanpurwa / Deputy ka Parao                  | 6                                  | 11                          | 8              | 94                      | 0                  |
|            |               | Associated Chem Pvt Ltd, Fazalganj, Panki, Site-5                   | 7                                  | 11                          | 8              | 83                      | 0                  |
|            |               | Head Post Office, Govind Nagar / Dabauli / Shastri NGR              | 6                                  | 10                          | 8              | 83                      | 0                  |
|            |               | Jajmau / Awas Vikas   | 6                                  | 9                           | 8              | 93                      | 0                  |
|            |               | I.I.T. Campus, Kanpur   | 2                                  | 2                           | 2              | 100                     | 0                  |
|            |               | IIT 12 parameter  | 2                                  | 2                           | 2              | 48                      | 0                  |
|            |               | Dada Nagar, Kanpur  | 3                                  | 17                          | 6              | 91                      | 0                  |
|            |               | Ramadevi, Kanpur  | 2                                  | 4                           | 2              | 88                      | 0                  |
|            | Khurja        | Central Glass & Ceramic Research Institute                          | 19                                 | 26                          | 22             | 95                      | 0                  |
|            |               | Ahirpara  | 19                                 | 23                          | 20             | 92                      | 0                  |
|            | Lucknow       | Mahanagar   | 4                                  | 19                          | 8              | 225                     | 0                  |
|            |               | Chandganj Garden, Aliganj   | 4                                  | 19                          | 8              | 270                     | 0                  |
|            |               | Kapoors Hotel, Hazratganj   | 4                                  | 19                          | 8              | 187                     | 0                  |
|            |               | Talkatora   | 4                                  | 19                          | 8              | 268                     | 0                  |
|            |               | Aminabad / S.M.K Chowk  | 4                                  | 19                          | 8              | 279                     | 0                  |
|            |               | Nagar Nigam   | 4                                  | 19                          | 8              | 268                     | 0                  |
|            |               | Ansal Technical Institute Campus, Ansal API                         | 4                                  | 19                          | 8              | 266                     | 0                  |
|            |               | Vikas Khand   | 2                                  | 2                           | 2              | 56                      | 0                  |
|            | Mathura       | RO. UPPCB, 65 Baldevpuri, Maholi Road                               | 8                                  | 15                          | 11             | 81                      | 0                  |
|            |               | CETP, Industrial Area, Mathura                                      | 10                                 | 17                          | 13             | 83                      | 0                  |
|            | Meerut        | Begum Bridge  | 9                                  | 12                          | 10             | 59                      | 0                  |
|            |               | Thana Railway Road / Kesarganj                                      | 7                                  | 8                           | 7              | 59                      | 0                  |
|            | Moradabad     | Hindu College, Station Road   | 8                                  | 60                          | 32             | 91                      | 0                  |
|            |               | Central Police Hospital, Civil Lines                                | 5                                  | 39                          | 20             | 90                      | 0                  |
|            | Muzaffarnagar | Sahara Parivar Office, Kamal Cinema, Building, Railway Station Road | 6                                  | 13                          | 8              | 97                      | 0                  |
|            |               | Lekhpal Bhawan, Tehsil Sadar Campus                                 | 7                                  | 15                          | 9              | 97                      | 0                  |
|            | Noida         | UP PPCB, E-12/1, Sector - 1   | 5                                  | 31                          | 14             | 97                      | 0                  |
|            |               | Gee-Pee Electroplating and Eng. Work                                | 5                                  | 30                          | 15             | 96                      | 0                  |
|            |               | Subros, Noida   | 6                                  | 39                          | 12             | 92                      | 0                  |
|            |               | Golf Course, Noida  | 7                                  | 39                          | 11             | 90                      | 0                  |
|            | Raebareli     | Town Hall Colony, Ahmad Nagar, Gulab Road                           | 7                                  | 10                          | 9              | 54                      | 0                  |
|            |               | Khoya mandi Tiraha Lucknow Road Raebareli                           | 12                                 | 16                          | 14             | 54                      | 0                  |
|            |               | Amawan Road Ind. Area Raebareli                                     | 7                                  | 11                          | 10             | 54                      | 0                  |
|            | Saharanpur    | SRE-A, IIT Roorkee, Saharanpur Campus                               | 9                                  | 25                          | 16             | 92                      | 0                  |
|            |               | UPCL S.E. Office, Near Clock Tower                                  | 10                                 | 23                          | 16             | 91                      | 0                  |
|            | Unnao         | H. No. 5, Krishna Nagar   | 7                                  | 11                          | 9              | 74                      | 0                  |

Annexure 3: Location wise SO<sub>2</sub> - 2019

| State / UT  | City        | Location  | Concentration in µg/m <sup>3</sup> |                             |                | No. of days in the year | Standard deviation |   |
|-------------|-------------|---|------------------------------------|-----------------------------|----------------|-------------------------|--------------------|---|
|             |             |   | Minimum (24-hourly average)        | Maximum (24-hourly average) | Annual Average |                         |                    |   |
|             | Varanasi    | IIA Building, Industrial Area, Site 10                      | 8                                  | 11                          | 9              | 74                      | 0                  | 1 |
|             |             | Regional Office, Jawahar Nagar                              | 4                                  | 14                          | 9              | 98                      | 0                  | 2 |
|             |             | Sigra   | 3                                  | 14                          | 9              | 191                     | 0                  | 2 |
|             |             | Saket Nagar   | 6                                  | 15                          | 10             | 93                      | 0                  | 2 |
|             |             | Banaras Hindu University                                    | 6                                  | 12                          | 9              | 91                      | 0                  | 1 |
|             |             | Chandpur  | 9                                  | 16                          | 11             | 88                      | 0                  | 2 |
| Uttarakhand | Dehradun    | Raipur Road, Near parag Diary                               | 21                                 | 26                          | 23             | 68                      | 0                  | 1 |
|             |             | Clock Tower, PWD Guest House                                | 23                                 | 27                          | 25             | 70                      | 0                  | 1 |
|             |             | Himalaya Drug Co. Near ISBT                                 | 23                                 | 28                          | 26             | 68                      | 0                  | 1 |
|             | Haldwani    | Govt. Women Hospital  | 5                                  | 32                          | 8              | 103                     | 0                  | 3 |
|             | Haridwar    | SIDCUL, Haridwar  | 16                                 | 23                          | 20             | 66                      | 0                  | 3 |
|             | Kashipur    | BSNL Office, Kashipur                                       | 13                                 | 24                          | 14             | 97                      | 0                  | 1 |
|             | Rishikesh   | Nagar Palika Parishad                                       | 19                                 | 25                          | 22             | 78                      | 0                  | 1 |
|             | Rudrapur    | SIDCUL Office   | 12                                 | 23                          | 14             | 87                      | 0                  | 1 |
| West Bengal | Alipurduar  | Rabikanta High School                                       | 2                                  | 11                          | 7              | 103                     | 0                  | 3 |
|             |             | Jaigaon Police Station                                      | 2                                  | 12                          | 7              | 102                     | 0                  | 3 |
|             |             | Birpara Police Station                                      | 2                                  | 13                          | 7              | 104                     | 0                  | 3 |
|             | Amtala      | P Roy Industrial Training Institute, Amtala                 | 2                                  | 12                          | 7              | 104                     | 0                  | 3 |
|             | Asansol     | Asansol Municipal Corporation                               | 8                                  | 18                          | 15             | 104                     | 0                  | 1 |
|             |             | Kangsabati Spinning Mill, Barjora                           | 7                                  | 19                          | 15             | 104                     | 0                  | 1 |
|             |             | Burnpur Town Department, Burnpur                            | 11                                 | 18                          | 15             | 104                     | 0                  | 1 |
|             | Baharampur  | Baharampur Municipality                                     | 2                                  | 22                          | 7              | 104                     | 0                  | 3 |
|             | Balurghat   | Balurghat College   | 2                                  | 12                          | 6              | 104                     | 0                  | 3 |
|             | Bankura     | Bankura Municipility  | 2                                  | 14                          | 2              | 104                     | 0                  | 1 |
|             | Barasat     | Barasat Municipality, 73 Rishi Bankim Chandra Road          | 2                                  | 20                          | 8              | 103                     | 0                  | 2 |
|             | Bardhaman   | Bardhaman Town, Rajbati                                     | 2                                  | 14                          | 2              | 104                     | 0                  | 1 |
|             | Barrackpore | Barrackpore Municipiaplity                                  | 2                                  | 19                          | 8              | 104                     | 0                  | 3 |
|             |             | Dum Dum Telephone Exchange                                  | 3                                  | 16                          | 8              | 103                     | 0                  | 2 |
|             |             | Khardah Municipality  | 4                                  | 21                          | 8              | 103                     | 0                  | 3 |
|             | Baruipur    | Bauipur Police Station, Baruipur                            | 2                                  | 16                          | 7              | 104                     | 0                  | 3 |
|             | Bolpur      | Bolpur Municipility   | 2                                  | 15                          | 2              | 104                     | 0                  | 1 |
|             | Chinsura    | Chinsura Municipility, Pipulpati Auto Stand                 | 2                                  | 18                          | 7              | 104                     | 0                  | 2 |
|             | Coochbehar  | ABM Seal College  | 2                                  | 14                          | 7              | 104                     | 0                  | 3 |
|             |             | Uttarbanga Krishi Visvavidyalaya, Pundibari                 | 2                                  | 11                          | 6              | 104                     | 0                  | 3 |
|             | Dankuni     | Krishnanagar Municipility, Dankuni                          | 2                                  | 18                          | 7              | 104                     | 0                  | 2 |
|             | Darjeeling  | Bose Institute Campus                                       | 2                                  | 10                          | 5              | 104                     | 0                  | 2 |
|             | Durgapur    | DMC Water Works, Angadpur                                   | 9                                  | 17                          | 15             | 104                     | 0                  | 1 |
|             |             | Kwality Hotel, Bhiringi More, Benachiti                     | 2                                  | 18                          | 15             | 104                     | 0                  | 2 |
|             |             | Bidhannagar, PCBL Club, Muchipara                           | 7                                  | 22                          | 11             | 103                     | 0                  | 3 |
|             |             | Dew India Limited, PCBL More, Durgapur                      | 2                                  | 18                          | 15             | 104                     | 0                  | 2 |
|             | Ghatal      | Annapurna Hotel, Ghatal-Panskura Bus Stand                  | 2                                  | 22                          | 10             | 107                     | 0                  | 5 |
|             | Haldia      | Debhog Milan Viyapith, Bhabanipur                           | 4                                  | 19                          | 9              | 107                     | 0                  | 3 |
|             |             | Bhunia Raichak, Driver's Hut, Bhunia                        | 3                                  | 22                          | 10             | 105                     | 0                  | 4 |
|             |             | Supermarket Building, Durgachak                             | 2                                  | 20                          | 9              | 106                     | 0                  | 4 |
|             |             | WBIIDC Ruchi Soya Ind. Durgachak                            | 2                                  | 20                          | 9              | 106                     | 0                  | 4 |
|             | Howrah      | Howrah Municipal Corporation                                | 5                                  | 26                          | 13             | 105                     | 0                  | 5 |
|             |             | Naskarpara Pump House, Ghuseri                              | 3                                  | 21                          | 11             | 107                     | 0                  | 5 |
|             |             | CDS & Health Centre, Bator                                  | 6                                  | 23                          | 12             | 104                     | 0                  | 4 |
|             |             | Howrah Municipality School, Bandhaghhat                     | 4                                  | 23                          | 12             | 104                     | 0                  | 5 |
|             | Jalpaiguri  | Raninagar Jalpaigur   | 2                                  | 12                          | 6              | 106                     | 0                  | 3 |
|             | Jhargram    | Jhargram  | 3                                  | 19                          | 9              | 105                     | 0                  | 4 |
|             | Kalimpong   | Kalimpong Municipality                                      | 2                                  | 10                          | 6              | 104                     | 0                  | 3 |
|             | Kalyani     | College of Medicine & JNM Hospital, Kalyani Industrial Area | 2                                  | 20                          | 7              | 104                     | 0                  | 3 |
|             | Kharagpur   | AMD Building, TATA Bearing                                  | 5                                  | 24                          | 13             | 106                     | 0                  | 5 |
|             | Kolkata     | Salt Lake, Rooftop of CK Market                             | 2                                  | 13                          | 7              | 104                     | 0                  | 2 |
|             |             | KMC office Building, Moulali                                | 2                                  | 18                          | 9              | 104                     | 0                  | 3 |
|             |             | Minto Park, Inside Park AJC Bose Road                       | 3                                  | 15                          | 8              | 104                     | 0                  | 2 |
|             |             | Dunlop Bridge, National Sample Survey                       | 4                                  | 18                          | 10             | 104                     | 0                  | 3 |
|             |             | Behala Chowrasta, Traffic Guard Building                    | 3                                  | 18                          | 8              | 104                     | 0                  | 3 |
|             |             | Upanagari Sporting Club, Baishnabghata                      | 2                                  | 17                          | 8              | 104                     | 0                  | 3 |
|             |             | Cossipore Police Station, B.T. Road                         | 2                                  | 35                          | 10             | 79                      | 0                  | 7 |

Annexure 3: Location wise SO<sub>2</sub> - 2019

| State / UT  | City         | Location  | Concentration in µg/m <sup>3</sup> |                                   |                   | No. of days in the year | Standard deviation |   |
|-------------|--------------|---|------------------------------------|-----------------------------------|-------------------|-------------------------|--------------------|---|
|             |              |   | Minimum<br>(24-hourly<br>average)  | Maximum<br>(24-hourly<br>average) | Annual<br>Average |                         |                    |   |
| West Bengal | Kolkata      | Dalhousie Square, Lal Bazzar Police Headqtr.                        | 2                                  | 36                                | 9                 | 79                      | 0                  | 7 |
|             |              | Kasba   | 2                                  | 37                                | 5                 | 78                      | 0                  | 5 |
|             |              | RD CPCB   | 2                                  | 22                                | 4                 | 111                     | 0                  | 4 |
|             |              | Infectious Diseases & BG Hospital, Beliaghata                       | 2                                  | 18                                | 8                 | 104                     | 0                  | 3 |
|             |              | CESC Building, Mandeville Gardens, Gariahat                         | 2                                  | 13                                | 7                 | 104                     | 0                  | 2 |
|             |              | Administrative Building, Hyde Road                                  | 3                                  | 20                                | 11                | 104                     | 0                  | 3 |
|             |              | KMC Drainage, Pumping Station, 9 Mominpur Road, Mominpur            | 2                                  | 14                                | 7                 | 104                     | 0                  | 2 |
|             |              | Paribesh Bhawan   | 2                                  | 20                                | 7                 | 104                     | 0                  | 3 |
|             |              | Milan Tirtha Club, Picnic Garden                                    | 2                                  | 22                                | 9                 | 104                     | 0                  | 4 |
|             |              | Public Health Engineering Office Building, Rajarhar                 | 2                                  | 20                                | 7                 | 104                     | 0                  | 4 |
|             |              | Tennis Club Biulding, 45-46 Canal West Road, Fariapukur, Shyambazar | 3                                  | 17                                | 9                 | 104                     | 0                  | 3 |
|             |              | Elite India Rubber Products Pvt.Ltd., Topsia                        | 3                                  | 17                                | 9                 | 104                     | 0                  | 3 |
|             |              | Maniktala Fire Station Building, 17, Bagmari Lane, Ultadanga        | 3                                  | 23                                | 9                 | 104                     | 0                  | 3 |
|             |              | Tollygunge  | 2                                  | 12                                | 7                 | 104                     | 0                  | 2 |
|             | Krishnanagar | Krishnanagar Municipality, TN Thakur Road                           | 2                                  | 15                                | 7                 | 104                     | 0                  | 2 |
|             | Madhyamgram  | Madhyamgram Municipality  | 2                                  | 20                                | 8                 | 103                     | 0                  | 2 |
|             | Malda        | WBPCB Office, Paribesh Bhavan, Vill. Abhirampur                     | 2                                  | 13                                | 7                 | 103                     | 0                  | 3 |
|             | Medinipur    | Vidyasagar University   | 4                                  | 18                                | 9                 | 107                     | 0                  | 3 |
|             | Purulia      | Purulia Municipality  | 2                                  | 13                                | 2                 | 104                     | 0                  | 1 |
|             | Raiganj      | Raiganj College   | 2                                  | 28                                | 7                 | 104                     | 0                  | 4 |
|             | Rampurhat    | Rampurhat Municipality  | 2                                  | 12                                | 2                 | 104                     | 0                  | 1 |
|             | Ranaghat     | Ranaghat Municipality, 11 school lane                               | 2                                  | 17                                | 7                 | 104                     | 0                  | 3 |
|             | Raniganj     | Raniganj Municipality   | 10                                 | 19                                | 15                | 104                     | 0                  | 1 |
|             |              | Mangalpur, SKS School Mangalpur                                     | 8                                  | 18                                | 15                | 104                     | 0                  | 1 |
|             |              | Jamuria Municipality  | 7                                  | 20                                | 15                | 104                     | 0                  | 2 |
|             | Rishra       | Rishra Municipality   | 2                                  | 21                                | 8                 | 104                     | 0                  | 3 |
|             | Sankrail     | Bharat Co-op Housing Society  | 2                                  | 23                                | 9                 | 104                     | 0                  | 4 |
|             |              | Bagan Police Station, Bagan   | 3                                  | 23                                | 10                | 104                     | 0                  | 4 |
|             |              | Dhulagar Gram Pachayat  | 5                                  | 23                                | 12                | 106                     | 0                  | 5 |
|             |              | P Mukherjee's House, Near SBI Amta                                  | 4                                  | 34                                | 11                | 104                     | 0                  | 5 |
|             | Siliguri     | Siliguri  | 2                                  | 13                                | 6                 | 105                     | 0                  | 3 |
|             | Suri         | Suri Municipality   | 2                                  | 15                                | 2                 | 104                     | 0                  | 1 |
|             | Tamluk       | HP Gas Service Station, Maniktala                                   | 3                                  | 23                                | 10                | 106                     | 0                  | 5 |
|             | Trieni       | Trieni Health Center  | 2                                  | 16                                | 7                 | 104                     | 0                  | 2 |
|             | Uluberia     | ESI hospital nursing building, 3rd floor, Near Sahib Mandir         | 3                                  | 23                                | 10                | 104                     | 0                  | 5 |

Note:

Cities under Ecologically Sensitive Area (5 cities namely Alwar, Agra, Firozabad, Mathura, Dehradun) as notified by Central Government. The rest of the cities are under Industrial / Residential / Rural / others category of the National Ambient Air Quality Standard, 2009. Annual NAAQS of SO<sub>2</sub> is 50 µg/m<sup>3</sup> for Residential/ industrial / other area and 20 µg/m<sup>3</sup> for ecologically sensitive area.

**Levels of Nitrogen Dioxide (NO<sub>2</sub>) in locations / Ambient Air Quality Monitoring Stations under NAMP during 2019**

| State / UT     | City / town / village          | Location  | Concentration in µg/m <sup>3</sup> |                             |                | No. of days in the year | Standard deviation |
|----------------|--------------------------------|---|------------------------------------|-----------------------------|----------------|-------------------------|--------------------|
|                |                                |   | Minimum (24-hourly average)        | Maximum (24-hourly average) | Annual Average |                         |                    |
| Andhra Pradesh | Anantapur                      | Kamala Nagar  | 10                                 | 26                          | 18             | 105                     | 0 4                |
|                |                                | APIIC Zonl office industrial estate   | 9                                  | 24                          | 14             | 106                     | 0 3                |
|                | Chittoor                       | Cancer Unit. G.G.Hsharada Nagar, JNTU Road  | 10                                 | 16                          | 12             | 108                     | 0 1                |
|                |                                | D.No.6/5/545, Ram Nagar Colony  | 10                                 | 24                          | 16             | 108                     | 0 3                |
|                |                                | GNC Toll Gate Tirumala  | 11                                 | 105                         | 37             | 107                     | 2 16               |
|                |                                | Near Nutrine Confectionery, Palamaner Road  | 9                                  | 23                          | 15             | 107                     | 0 2                |
|                |                                | O/O Mines and Geology, Old Collector Office, Greampet                             | 10                                 | 22                          | 15             | 105                     | 0 2                |
|                | Eluru                          | Sankar Foundary, Industrial Estate, Adjacent of DIC Office                        | 11                                 | 21                          | 15             | 106                     | 0 2                |
|                |                                | Rangachari street, Shanthapeta.   | 10                                 | 20                          | 14             | 92                      | 0 2                |
|                |                                | Ashram Diagnostic Centre  | 15                                 | 30                          | 19             | 108                     | 0 2                |
|                |                                | District Head quarters hospital   | 17                                 | 30                          | 19             | 108                     | 0 2                |
|                |                                | M/s Laxmi Propylene Ltd., Plot.No. 25, Industrial Park, Satrampadu                | 16                                 | 30                          | 19             | 108                     | 0 2                |
|                | Guntur                         | Somalingeswara nilayam D.N.7B-18-5, Thooru Veedhi, Eastern street, Paidichintaadu | 17                                 | 25                          | 19             | 108                     | 0 2                |
|                |                                | Near Hindu College, Market Road   | 17                                 | 25                          | 19             | 100                     | 0 2                |
|                |                                | A.P. Pollution Control Board, D.No.4-5-4/5C4/3, Navabharath nagar, Ring Road      | 17                                 | 25                          | 19             | 101                     | 0 2                |
|                |                                | Distirct Industries Center office Buiding Autonagar                               | 16                                 | 25                          | 19             | 100                     | 0 2                |
|                | Kadapa                         | Government General hospital   | 17                                 | 24                          | 19             | 101                     | 0 2                |
|                |                                | Near ICL Industries, Yerragunta, YSR  | 10                                 | 25                          | 16             | 108                     | 0 3                |
|                |                                | Devi Diabetes & Hormone Centre, 7 Roads   | 10                                 | 27                          | 15             | 106                     | 0 3                |
|                |                                | DIC Office,Kadapa   | 10                                 | 20                          | 15             | 108                     | 0 2                |
|                |                                | Rajiv Gandhi Institute of Medical Sciences  | 9                                  | 19                          | 13             | 108                     | 0 3                |
|                | Kakinada                       | Municipal Primary School  | 10                                 | 23                          | 15             | 107                     | 0 3                |
|                |                                | Office Building Ramanayyapeta   | 11                                 | 24                          | 18             | 102                     | 0 3                |
|                |                                | Gram Panchayathi building, Suryaopeta   | 10                                 | 27                          | 19             | 105                     | 0 4                |
|                |                                | MEE Seva / MEPMA Office, Sailipeta  | 10                                 | 29                          | 20             | 105                     | 0 4                |
|                |                                | Petro Chemical Engineering Block, JNTU , Pithapuram Road                          | 9                                  | 27                          | 18             | 106                     | 0 5                |
|                | Kurnool                        | Mourya Inn, Krishna Nagar   | 9                                  | 24                          | 14             | 108                     | 0 3                |
|                |                                | APIIC Building Industrial estate, Kallur at IDA Bobbili Growth Center             | 10                                 | 23                          | 15             | 107                     | 0 3                |
|                |                                | Rajivihar Circle  | 11                                 | 36                          | 19             | 108                     | 0 4                |
|                |                                | Pump House, Venkataramana Colony  | 10                                 | 18                          | 12             | 108                     | 0 2                |
|                | Nellore                        | Venkatareddy Nagar, Vedayapalem   | 16                                 | 25                          | 19             | 107                     | 0 2                |
|                |                                | D. No.15-471, James Garden, Venkata Ramapuram, Nellore, SPSR Nellore District     | 15                                 | 25                          | 19             | 107                     | 0 2                |
|                |                                | Chandramouli nagar  | 16                                 | 27                          | 19             | 107                     | 0 2                |
|                |                                | Dr.P.V. Rama chandra Reddy Hospital, Brindavnam                                   | 15                                 | 25                          | 19             | 107                     | 0 2                |
|                | Ongole                         | Near Court Center   | 15                                 | 26                          | 19             | 107                     | 0 2                |
|                |                                | APIIC, Administrative Office, Growth Centre, Gundlapalli                          | 16                                 | 26                          | 19             | 104                     | 0 2                |
|                |                                | Ongole Municipal Corporation  | 16                                 | 26                          | 19             | 106                     | 0 2                |
|                |                                | Prakasam Milk Product Compay  | 16                                 | 26                          | 19             | 105                     | 0 2                |
|                | Rajahmundry/ Rajamahendravaram | Staff Clud Building, A.P. Paper Mill  | 11                                 | 29                          | 19             | 98                      | 0 4                |
|                |                                | GAIL Administrative Office, A.V. Apparao Road                                     | 10                                 | 27                          | 18             | 104                     | 0 4                |
|                |                                | MCH Block ,District Hospital, Near Central Prison, Lalacheruvu Road               | 10                                 | 27                          | 18             | 105                     | 0 4                |
|                |                                | APEPDCL, Circle Office Godavari Gattu   | 11                                 | 27                          | 18             | 97                      | 0 3                |
|                | Srikakulam                     | SAMKRG Pistons Quarters Bulding, Near IDA, Pydibhimavaram                         | 13                                 | 29                          | 18             | 96                      | 0 3                |

Annexure 4: Location wise NO<sub>2</sub> - 2019

| State / UT        | City / town / village | Location  | Concentration in µg/m <sup>3</sup> |                             |                | No. of days in the year | Standard deviation |
|-------------------|-----------------------|---|------------------------------------|-----------------------------|----------------|-------------------------|--------------------|
|                   |                       |   | Minimum (24-hourly average)        | Maximum (24-hourly average) | Annual Average |                         |                    |
|                   |                       | District cooperative office at SKLM Old Bridge  | 11                                 | 28                          | 18             | 106                     | 0 3                |
|                   |                       | APIIC, Kushalapuram   | 12                                 | 28                          | 19             | 95                      | 0 4                |
|                   |                       | Municipal corporation Office, Old Bustand   | 13                                 | 27                          | 19             | 107                     | 0 3                |
|                   | Tirupati              | Regional Science Centre, Chittoor Bypass  | 10                                 | 21                          | 14             | 106                     | 0 3                |
|                   |                       | Municipal Office, Tilak Road  | 11                                 | 29                          | 17             | 107                     | 0 3                |
|                   |                       | APPCB-Regional Office, 1st Floor, APSFC Building, NT road                                 | 10                                 | 20                          | 14             | 100                     | 0 2                |
|                   |                       | Sri Venkateswara Guest House (TTD SV Rest House), Near APSRTC Bus Stand                   | 11                                 | 25                          | 16             | 108                     | 0 3                |
|                   | Vijaywada             | NTR Veterinary college of sciences, Gannavaram  | 15                                 | 30                          | 19             | 107                     | 0 2                |
|                   |                       | VR Siddhartha Engineering college , Kanuru  | 14                                 | 32                          | 19             | 107                     | 0 2                |
|                   |                       | APIIC, IALA, IDA, Kondapalli  | 15                                 | 29                          | 19             | 106                     | 0 2                |
|                   |                       | Benz Circle   | 15                                 | 28                          | 19             | 107                     | 0 2                |
|                   |                       | Autonagar   | 15                                 | 29                          | 19             | 108                     | 0 2                |
|                   |                       | Police Control Room   | 16                                 | 30                          | 20             | 89                      | 0 2                |
|                   |                       | A.P. Pollution Control Board, plot no. 41, Sri Kanakadurga Officers colony, Gurunank Road | 14                                 | 30                          | 19             | 108                     | 0 2                |
|                   |                       | Gram Panchayat Office, Yenamalakuduru   | 13                                 | 31                          | 18             | 108                     | 0 2                |
|                   |                       | Indian Medical Association Hall,Eluru Road, Governorpet                                   | 15                                 | 27                          | 19             | 108                     | 0 2                |
|                   |                       | Industrial Estate, Marripalem   | 11                                 | 31                          | 21             | 108                     | 0 4                |
|                   | Vishakhapatnam        | Panchayat Raj office, Mindi   | 10                                 | 28                          | 18             | 105                     | 0 3                |
|                   |                       | Police Barracks   | 14                                 | 32                          | 22             | 105                     | 0 4                |
|                   |                       | INS-Virabahu, Naval Area  | 12                                 | 25                          | 17             | 93                      | 0 3                |
|                   |                       | Seethammadhara  | 12                                 | 28                          | 18             | 99                      | 0 3                |
|                   |                       | Ganapuram Area  | 11                                 | 32                          | 22             | 107                     | 0 4                |
|                   |                       | Pedagantyada (V), Gajuwada (M)  | 12                                 | 25                          | 18             | 104                     | 0 3                |
|                   |                       | CWMP, RAMKY, Parawada   | 10                                 | 30                          | 21             | 106                     | 0 4                |
|                   |                       | MVP Raitu Bajar   | 13                                 | 38                          | 17             | 102                     | 0 3                |
|                   | Vizianagaram          | Industrial Growth Centre, APIIC Building at IDA Bobbili                                   | 13                                 | 29                          | 19             | 101                     | 0 3                |
|                   |                       | APIIC Building, VT Agraharam,Industrial area  | 11                                 | 28                          | 20             | 105                     | 0 4                |
|                   |                       | Municipal Kaspa High School   | 11                                 | 28                          | 19             | 102                     | 0 3                |
|                   |                       | Municipal Office  | 12                                 | 29                          | 19             | 93                      | 0 4                |
| Arunachal Pradesh | Itinagar              | PCCF's Office Compound  | 5                                  | 17                          | 7              | 43                      | 0 4                |
|                   | Naharlagun            | APSPCB Office compound  | 5                                  | 14                          | 7              | 35                      | 0 4                |
| Assam             | Bongaigaon            | Oil India Ltd. PS-6, Chirang  | 10                                 | 20                          | 12             | 70                      | 0 1                |
|                   |                       | Barpara Office Building   | 10                                 | 18                          | 12             | 86                      | 0 1                |
|                   | Daranga               | BATAD, Sandoop Jhankar town of Bhutan, Baska  | 10                                 | 21                          | 14             | 94                      | 0 2                |
|                   | Dibrugarh             | Dibrugarh Office Building   | 9                                  | 18                          | 11             | 89                      | 0 2                |
|                   | Golaghat              | Golaghat Office Building  | 9                                  | 16                          | 12             | 80                      | 0 2                |
|                   | Guwahati              | Head Office, Bamunimaidam   | 9                                  | 36                          | 15             | 134                     | 0 5                |
|                   |                       | Boragaon, IASST, Kamrup   | 12                                 | 21                          | 16             | 114                     | 0 2                |
|                   |                       | Guwahati University, Kamrup   | 11                                 | 22                          | 16             | 117                     | 0 3                |
|                   |                       | ITI Building, Gopinath Nagar  | 10                                 | 30                          | 15             | 117                     | 0 3                |
|                   |                       | Khanapara, Central Dairy, Kamrup  | 10                                 | 34                          | 15             | 129                     | 0 3                |
|                   |                       | Near Pragjyotish College, Santipur  | 11                                 | 27                          | 16             | 133                     | 0 2                |
|                   | Margherita            | Coal India Office   | 9                                  | 18                          | 12             | 91                      | 0 2                |
|                   | Nagaon                | Water Resources Div., Christian Patty, Nagaon College                                     | 11                                 | 20                          | 15             | 97                      | 0 2                |
|                   | Nalbari               | PWD Rural Div Office Complex, near Gordon Boy's GS School                                 | 11                                 | 18                          | 14             | 77                      | 0 2                |
|                   | North Lakhimpur       | Bazar Patti, North Lakhimpur Town   | 11                                 | 17                          | 14             | 86                      | 0 2                |
|                   | Silchar               | Govt. Boys HS School, Janiganj  | 10                                 | 14                          | 11             | 74                      | 0 1                |
|                   |                       | RLO, Ithkola Market, Ghaniwala Road   | 8                                  | 13                          | 10             | 75                      | 0 1                |
|                   | Sivasagar             | Sibasagar Office Building   | 9                                  | 17                          | 12             | 102                     | 0 1                |
|                   |                       | Usha Lodge, near ONGCL Colony   | 10                                 | 18                          | 14             | 103                     | 0 2                |
|                   | Tezpur                | Tezpur Office Building  | 11                                 | 20                          | 15             | 86                      | 0 2                |

Annexure 4: Location wise NO<sub>2</sub> - 2019

| State / UT                           | City / town / village | Location  | Concentration in µg/m <sup>3</sup>                                 |                             |                | No. of days in the year | Standard deviation |      |
|--------------------------------------|-----------------------|---|--|-----------------------------|----------------|-------------------------|--------------------|------|
|                                      |                       |   | Minimum (24-hourly average)  | Maximum (24-hourly average) | Annual Average |                         |                    |      |
|                                      | Tinsukia              | Digboi Carbon factory Campus, Borguri                         | 6  | 16                          | 12             | 94                      | 0 2                |      |
|                                      |                       | Shreepuria, Borguri   | 9  | 17                          | 12             | 98                      | 0 2                |      |
|                                      |                       | Shivdham  | 9  | 18                          | 13             | 98                      | 0 2                |      |
| Bihar                                | Begusarai             | Begusarai   | 16   | 39                          | 22             | 104                     | 0 3                |      |
|                                      | Darbhanga             | Smt Baby Kumari, Ashok Hotel,Kadirabad Chowk                  | 18   | 32                          | 24             | 105                     | 0 3                |      |
|                                      | Gaya                  | Godam Road, Raja Market                                       | 15   | 34                          | 21             | 104                     | 0 3                |      |
|                                      | Muzaffarpur           | BSPCB Regional Office, Bela Industrial Area, Bela             | 19   | 49                          | 31             | 104                     | 0 7                |      |
|                                      | Patna                 | Beltron Bhawan, Shastri Nagar                                 | 13   | 61                          | 33             | 59                      | 0 10               |      |
|                                      |                       | Gandhi Maidan, Auto Exhaust Test Centre                       | 29   | 121                         | 69             | 75                      | 18 17              |      |
|                                      | Rajgir                | Sujkund, Near Samuraji hotel                                  | 16   | 30                          | 21             | 104                     | 0 3                |      |
| Chandigarh                           | Chandigarh            | Takia,Ward no.2, Rhotas                                       | 16   | 27                          | 20             | 105                     | 0 2                |      |
|                                      |                       | Modern Foods, Industrial Area                                 | 8  | 48                          | 24             | 149                     | 0 8                |      |
|                                      |                       | Sector-17 C   | 8  | 43                          | 19             | 142                     | 0 7                |      |
|                                      |                       | Punjab Engineering College, Sector- 12                        | 5  | 33                          | 16             | 162                     | 0 5                |      |
|                                      |                       | Sector-39, IMTECH   | 8  | 85                          | 18             | 155                     | 1 8                |      |
| Chattisgarh                          | Durg-Bhillainagar     | Kaimbwala Village   | 8  | 53                          | 16             | 140                     | 0 7                |      |
|                                      |                       | Bilaspur  | Regional Office, CECB Vyapar Vihar                                 | 10                          | 14             | 12                      | 91                 | 0 1  |
|                                      |                       | Visak Hostel, Sector-4  | 13   | 19                          | 16             | 77                      | 0 2                |      |
|                                      |                       | R.O., 5/32 Banglow Office Building                            | 8  | 15                          | 12             | 83                      | 0 2                |      |
|                                      |                       | M.P. Laghu Udyog Nigam  | 17   | 25                          | 22             | 84                      | 0 3                |      |
|                                      | Korba                 | CSIDC Industrial Growth Center, Borai, Durg                   | 15   | 25                          | 18             | 81                      | 0 3                |      |
|                                      |                       | HIG 21,22.Near Ghantaghar, MP Extension                       | 16   | 30                          | 19             | 97                      | 0 2                |      |
|                                      |                       | Pragati Nagar NTPC Colony, Jamnipali                          | 16   | 24                          | 18             | 103                     | 0 1                |      |
|                                      |                       | I.T.I., Rampur  | 16   | 21                          | 19             | 100                     | 0 1                |      |
|                                      |                       | Raipur  | New HIG-9, Hirapur/Housing Board Complex Kabir Nagar               | 19                          | 34             | 26                      | 67                 | 0 4  |
| Dadra & Nagar Haveli and Daman & Diu | Daman                 | M/S Wool Worth India Pvt. Ltd. Sarora                         | 20   | 42                          | 33             | 40                      | 0 4                |      |
|                                      |                       | Baldevi (Dadra & Nagar Haveli)                                | Baldevi Village, Athola, Dandul Faliya, Teh:Dadra & Nagar Haveli   | 9                           | 24             | 17                      | 97                 | 0 5  |
|                                      |                       | Khadoli   | Industrial Area, Khadoli   | 11                          | 45             | 28                      | 99                 | 0 11 |
|                                      |                       | Silvassa  | Chetan Guest House, Near Post Office, Piperia, silvassa Char Rasta | 10                          | 40             | 26                      | 100                | 0 11 |
|                                      |                       | Daman   | Prima Plastic, Kadaiya Industrial Area, Kadaiya                    | 9                           | 39             | 26                      | 97                 | 0 9  |
|                                      |                       |   | Mashal Chawk, Nani Daman   | 8                           | 37             | 23                      | 99                 | 0 9  |
|                                      | Patlara (Daman)       | Makat Faliya/ Ambavadi, Patlara Village, Moti Daman Teh:Daman | 9  | 28                          | 17             | 100                     | 0 6                |      |
| Delhi                                | Delhi                 | N.Y. School, Sarojini Nagar, Delhi                            | 28   | 180                         | 92             | 88                      | 53 32              |      |
|                                      |                       | Janakpuri   | 16   | 107                         | 47             | 120                     | 7 20               |      |
|                                      |                       | Naraina Industrial Area, Delhi                                | 28   | 195                         | 98             | 88                      | 63 33              |      |
|                                      |                       | Nizamuddin  | 24   | 175                         | 72             | 116                     | 35 29              |      |
|                                      |                       | Pritampura  | 11   | 148                         | 46             | 127                     | 11 23              |      |
|                                      |                       | Shahadra  | 19   | 90                          | 47             | 113                     | 4 16               |      |
|                                      |                       | Shahzada Bagh   | 31   | 120                         | 63             | 109                     | 16 19              |      |
|                                      |                       | Siri Fort   | 16   | 145                         | 53             | 113                     | 15 27              |      |
|                                      |                       | Town Hall, Ayurvedic Dispensary, Chandni Chowk, Delhi         | 43   | 209                         | 117            | 88                      | 72 37              |      |
| Goa                                  | Goa                   | Amona   | Amona, Bicholim  | 13                          | 16             | 14                      | 105                | 0 1  |
|                                      |                       | Assanora  | Assanora Junction, Bardez  | 13                          | 16             | 14                      | 104                | 0 1  |
|                                      |                       | Bicholim  | Bicholim   | 13                          | 17             | 14                      | 103                | 0 1  |
|                                      |                       | Codli   | Codli Tisk, Ponda, Sanguem   | 11                          | 17             | 14                      | 103                | 0 1  |
|                                      |                       | Cuncolim  | Cuncolim   | 13                          | 17             | 14                      | 102                | 0 1  |
|                                      |                       | Honda   | Honda Junction, Sattari  | 13                          | 16             | 14                      | 104                | 0 1  |
|                                      |                       | Kundaim   | Kundaim Industrial Estate  | 13                          | 17             | 14                      | 104                | 0 1  |
|                                      |                       | Mapusa  | Mapusa town  | 5                           | 31             | 10                      | 90                 | 0 6  |
|                                      |                       | Margao  | Margao Town  | 13                          | 16             | 14                      | 102                | 0 1  |
|                                      |                       | Mormugao  | Fire Brigade Station, Port Trust                                   | 5                           | 45             | 13                      | 68                 | 0 6  |
|                                      |                       | Panaji  | Old GSPCB premises, Patto  | 5                           | 31             | 13                      | 77                 | 0 6  |
|                                      |                       | Ponda   | Ponda Town   | 13                          | 16             | 14                      | 105                | 0 1  |
|                                      |                       | Sanguem   | Near Railway Station at Kalem, Sanguem                             | 13                          | 17             | 14                      | 103                | 0 1  |
|                                      |                       | Tilamol   | Quepem, Tilamol  | 13                          | 16             | 14                      | 102                | 0 1  |

Annexure 4: Location wise NO<sub>2</sub> - 2019

| State / UT       | City / town / village | Location  | Concentration in µg/m <sup>3</sup> |                             |                | No. of days in the year | Standard deviation |
|------------------|-----------------------|---|------------------------------------|-----------------------------|----------------|-------------------------|--------------------|
|                  |                       |   | Minimum (24-hourly average)        | Maximum (24-hourly average) | Annual Average |                         |                    |
| Gujarat          | Tuem                  | Tuem Industrial Estate  | 13                                 | 17                          | 14             | 104                     | 0 1                |
|                  | Usgao                 | Usgao Plae, Junction, Ponda   | 13                                 | 17                          | 14             | 96                      | 0 1                |
|                  | Vasco                 | Fuse Call Office, Mormugao  | 5                                  | 29                          | 13             | 88                      | 0 6                |
|                  | Ahmedabad             | Naroda, G.I.D.C., Ahmadabad   | 17                                 | 50                          | 25             | 87                      | 0 8                |
|                  |                       | Cadilla Bridge Narol  | 16                                 | 52                          | 24             | 86                      | 0 7                |
|                  |                       | Bhagavathi Estate, Keval Kanta Road, Rakhiyal                                     | 17                                 | 48                          | 25             | 88                      | 0 8                |
|                  |                       | Reliable Products, 61/62 Ilaben estate,PiranaDump Site,Narol (previous Dyno Wash) | 18                                 | 57                          | 28             | 87                      | 0 9                |
|                  |                       | L.D. Engg. College  | 17                                 | 52                          | 24             | 88                      | 0 8                |
|                  |                       | Shardaben Hospital, Saraspur  | 17                                 | 54                          | 25             | 86                      | 0 9                |
|                  |                       | R.C. Technical High School, Mirzapur  | 16                                 | 48                          | 24             | 86                      | 0 7                |
|                  |                       | AZL Behrampura, Ahmadabad   | 16                                 | 49                          | 25             | 87                      | 0 8                |
|                  |                       | Sola L.T. Chanakyapuri Pumping Station  | 16                                 | 46                          | 26             | 88                      | 0 7                |
|                  |                       | Rallis India Ltd.   | 17                                 | 46                          | 26             | 88                      | 0 6                |
|                  | Anklesvar             | Durga Traders, Bhavanafarm Society  | 16                                 | 45                          | 25             | 88                      | 0 6                |
|                  |                       | Jamnagar  | 14                                 | 43                          | 25             | 87                      | 0 7                |
|                  |                       | Nr. Sardhara Industrial Corporation   | 18                                 | 46                          | 26             | 87                      | 0 7                |
|                  | Rajkot                | GPCB Regional Ofce  | 16                                 | 51                          | 25             | 87                      | 0 8                |
|                  |                       | S.V.R. Engg. College  | 15                                 | 50                          | 26             | 87                      | 0 7                |
|                  |                       | B.R.C. High School, Udhna   | 15                                 | 50                          | 29             | 83                      | 0 8                |
|                  | Surat                 | Near Air India Office   | 13                                 | 52                          | 26             | 88                      | 0 10               |
|                  |                       | GPCB Office, Geri Vasahat   | 14                                 | 49                          | 25             | 87                      | 0 8                |
|                  |                       | Sterling Gelatin Guest House, Vill-Karakhadi Padia                                | 14                                 | 47                          | 25             | 87                      | 0 8                |
|                  | Vadodara              | Dandia Bazaar   | 16                                 | 45                          | 25             | 88                      | 0 7                |
|                  |                       | CETP Nandesari  | 16                                 | 60                          | 27             | 85                      | 0 10               |
|                  |                       | Lubrizol  | 14                                 | 55                          | 26             | 87                      | 0 10               |
|                  |                       | Vapi  | 10                                 | 58                          | 26             | 86                      | 0 10               |
|                  |                       | GEB, IIIrd Phase, GIDC  | 10                                 | 45                          | 23             | 87                      | 0 9                |
| Himachal Pradesh | Baddi                 | AHC barotiwala  | 20                                 | 38                          | 27             | 110                     | 0 4                |
|                  |                       | Housing Board   | 23                                 | 49                          | 33             | 48                      | 0 5                |
|                  |                       | Industry Department Office Building   | 19                                 | 44                          | 33             | 123                     | 0 5                |
|                  | Damtal                | Regional Office   | 5                                  | 12                          | 9              | 119                     | 0 2                |
|                  |                       | Old Road  | 5                                  | 12                          | 9              | 113                     | 0 1                |
|                  | Dharamshala           | Kotwali Bazar Dharamshala   | 5                                  | 10                          | 6              | 84                      | 0 1                |
|                  |                       | Daari, Dharamshala  | 5                                  | 14                          | 6              | 124                     | 0 1                |
|                  | Gulaba                | Behind green tax barrier  | 5                                  | 7                           | 5              | 19                      | 0 1                |
|                  | Kala Amb              | Kala Amb Industrial Area  | 10                                 | 36                          | 15             | 166                     | 0 2                |
|                  |                       | Kala Amb Town/Trilokpur   | 9                                  | 20                          | 14             | 161                     | 0 1                |
|                  | Manali                | Neetu Park, Manali, Kullu   | 7                                  | 16                          | 11             | 88                      | 0 2                |
|                  |                       | HPSPCB, Hadimba Road, Manali, Kullu   | 5                                  | 7                           | 5              | 72                      | 0 1                |
|                  | Marhi                 | Behind Police check post  | 5                                  | 11                          |                | 12                      | 0 2                |
|                  | Nalagarh              | Municipal Council   | 18                                 | 56                          | 25             | 114                     | 0 4                |
|                  | Paonta Sahib          | Paonta Sahib  | 9                                  | 21                          | 13             | 165                     | 0 2                |
|                  |                       | Gondhpur Industrial Area  | 11                                 | 19                          | 15             | 120                     | 0 1                |
|                  | Parwanoo              | Regional Office, Sector- 4  | 5                                  | 30                          | 6              | 133                     | 0 3                |
|                  |                       | Asst. Commissioner Building Sector I  | 5                                  | 34                          | 6              | 122                     | 0 3                |
|                  | Shimla                | Bus Stand, Winterfield  | 11                                 | 34                          | 26             | 202                     | 0 4                |
|                  | Sunder Nagar          | HPSPCB, BBMB Colony, Mandi  | 5                                  | 26                          | 8              | 143                     | 0 4                |
|                  |                       | Municipal Council, NH-21, Mandi   | 5                                  | 24                          | 9              | 107                     | 0 4                |
|                  | Una                   | Regional Office, Una  | 7                                  | 8                           |                | 17                      | 0 0                |
|                  | Vashisht              | Behind pollution check barrier, Bahang / Station No.-II1, Bahang                  | 5                                  | 11                          | 5              | 44                      | 0 2                |
| Jammu & Kashmir  | Jammu                 | Regional Office, Jammu  | 6                                  | 26                          | 17             | 66                      | 0 4                |
|                  |                       | M.A. Stadium, Jewel Chowk   | 10                                 | 24                          | 17             | 62                      | 0 3                |
|                  |                       | Bari Brahma Industrial Area   | 9                                  | 25                          | 17             | 73                      | 0 4                |
| Jharkhand        | Barajamda             | Barajamda U.M. Office   | 18                                 | 28                          | 23             | 91                      | 0 2                |
|                  | Dhanbad               | R.O. Dhanbad  | 30                                 | 43                          | 36             | 102                     | 0 3                |
|                  |                       | EMTI, Bastacola   | 28                                 | 44                          | 34             | 75                      | 0 3                |
|                  |                       | CGM Office, Kusunda   | 28                                 | 43                          | 34             | 100                     | 0 2                |
|                  | Jamshedpur            | Bistupur Vehical Testing Centre   | 37                                 | 54                          | 48             | 93                      | 0 4                |
|                  |                       | Golmuri Vehicle Testing Centre  | 37                                 | 52                          | 47             | 91                      | 0 3                |

Annexure 4: Location wise NO<sub>2</sub> - 2019

| State / UT     | City / town / village | Location   | Concentration in µg/m <sup>3</sup> |                             |                | No. of days in the year | Standard deviation |
|----------------|-----------------------|--|------------------------------------|-----------------------------|----------------|-------------------------|--------------------|
|                |                       |  | Minimum (24-hourly average)        | Maximum (24-hourly average) | Annual Average |                         |                    |
|                | Jharia                | M.A.D.A.   | 29                                 | 41                          | 35             | 105                     | 0 2                |
|                | Ranchi                | Albert Ekka Chowk, Main Road                                     | 35                                 | 121                         | 37             | 96                      | 1 9                |
|                | Saraikela             | RO Building, Adityapur   | 39                                 | 53                          | 46             | 91                      | 0 4                |
|                | Sindri                | BIT / PDIL   | 24                                 | 40                          | 33             | 73                      | 0 3                |
| Karnataka      | Bagalkote             | Bagalkote KSPCB Office Premises                                  | 8                                  | 32                          | 17             | 85                      | 0 3                |
|                | Bangalore             | Graphite India, White Field Road                                 | 15                                 | 41                          | 27             | 83                      | 0 6                |
|                |                       | AMCO Batteries, Mysore Road                                      | 18                                 | 41                          | 28             | 107                     | 0 6                |
|                |                       | KHB Industrial Area, Yelahanka                                   | 11                                 | 39                          | 24             | 80                      | 0 6                |
|                |                       | Peenya Industrial Area   | 18                                 | 38                          | 30             | 52                      | 0 7                |
|                |                       | Victoria hospital  | 14                                 | 38                          | 25             | 103                     | 0 7                |
|                |                       | Yeshwanthpura police station                                     | 14                                 | 38                          | 28             | 100                     | 0 6                |
|                |                       | Jnanabharathi, Bangalore University                              | 9                                  | 32                          | 17             | 102                     | 0 5                |
|                |                       | RV College of Engineering, Mysore Road                           | 18                                 | 18                          |                | 1                       | 0                  |
|                | Devanagere            | TERI office, Vital Medi healthcare Pvt Ltd                       | 14                                 | 40                          | 27             | 108                     | 0 7                |
|                |                       | Belgaum  | 9                                  | 27                          | 16             | 52                      | 0 4                |
|                |                       | Bidar  | 5                                  | 16                          | 9              | 59                      | 0 2                |
|                |                       | Bijapur  | 9                                  | 33                          | 17             | 36                      | 0 4                |
|                |                       | Chitradurga  | 5                                  | 11                          | 6              | 105                     | 0 2                |
|                | Mysore                | Regional Office building, KSPCB                                  | 5                                  | 14                          | 8              | 94                      | 0 2                |
|                |                       | Mothi Theatre, Gandhi Circle, P.B. Road / Traffic Police Station | 9                                  | 41                          | 19             | 80                      | 0 10               |
|                |                       | HPF Intakewell, Kumarapattnam                                    | 5                                  | 11                          | 7              | 102                     | 0 2                |
|                |                       | Gulburga   | 8                                  | 28                          | 13             | 58                      | 0 5                |
|                |                       | Hassan   | 14                                 | 27                          | 20             | 104                     | 0 3                |
|                |                       | Hubli-Dharwad  | 13                                 | 23                          | 17             | 105                     | 0 2                |
|                |                       |  | 14                                 | 26                          | 21             | 104                     | 0 3                |
|                |                       | Kolar  | 17                                 | 40                          | 27             | 98                      | 0 6                |
|                |                       | Mandya   | 11                                 | 27                          | 14             | 107                     | 0 2                |
|                |                       | Mangalore  | 9                                  | 11                          | 10             | 92                      | 0 0                |
|                |                       | K.R.Circle, Visvesvaraya Bldg                                    | 12                                 | 34                          | 15             | 111                     | 0 2                |
|                |                       |  | 11                                 | 11                          |                | 1                       | 0                  |
|                |                       | Raichur  | 5                                  | 27                          | 11             | 77                      | 0 5                |
|                |                       | Shimoga  | 5                                  | 14                          | 6              | 100                     | 0 2                |
|                |                       | Timukuru   | 17                                 | 42                          | 27             | 103                     | 0 6                |
| Kerala         | Alappuzha             | District Office, Alissery Road                                   | 5                                  | 5                           | 5              | 107                     | 0 0                |
|                |                       | DC Mills, Pathirappally  | 5                                  | 5                           | 5              | 25                      | 0 0                |
|                |                       | William Goodacre Power House Bridge                              | 5                                  | 10                          | 5              | 71                      | 0 1                |
|                | Kochi                 | Eloor I, FACT, Ambalamughal                                      | 6                                  | 31                          | 19             | 107                     | 0 4                |
|                |                       | Eloor II   | 10                                 | 43                          | 23             | 102                     | 0 5                |
|                |                       | Irumpanam  | 5                                  | 35                          | 11             | 105                     | 0 6                |
|                |                       | Ernakulum South  | 5                                  | 32                          | 13             | 65                      | 0 7                |
|                |                       | VYTTLA   | 5                                  | 33                          | 12             | 105                     | 0 6                |
|                |                       | MG Road Bank Ernakulum   | 5                                  | 31                          | 12             | 105                     | 0 6                |
|                |                       | KALAMASSERY / CSIR Complex                                       | 5                                  | 31                          | 10             | 103                     | 0 5                |
|                |                       | Kuttipadam   | 7                                  | 20                          | 13             | 42                      | 0 4                |
|                | Kollam                | KSPCB, District Office, Kadappakada                              | 5                                  | 8                           | 5              | 110                     | 0 0                |
|                |                       | KMML Chavara   | 5                                  | 9                           | 7              | 110                     | 0 1                |
|                | Kottayam              | Kottayam   | 12                                 | 13                          | 12             | 119                     | 0 0                |
|                |                       | Vadavathoor  | 12                                 | 14                          | 13             | 119                     | 0 0                |
|                | Kozhikode             | Kozhikode City   | 5                                  | 13                          | 5              | 103                     | 0 1                |
|                |                       | Nallalam   | 5                                  | 11                          | 5              | 67                      | 0 1                |
|                | Malapuram             | Kakkanchery, Sijmak oils   | 9                                  | 21                          | 15             | 107                     | 0 2                |
|                |                       | Palakkad   | 5                                  | 28                          | 7              | 98                      | 0 4                |
|                | Thiruvananthapuram    | Pathanamthitta   | 14                                 | 19                          | 17             | 100                     | 0 1                |
|                |                       | PRS Hospital/COSMO   | 8                                  | 29                          | 15             | 105                     | 0 5                |
|                |                       | SMV School   | 7                                  | 32                          | 16             | 105                     | 0 5                |
|                |                       | VELI / HiTech Chackai  | 10                                 | 40                          | 18             | 105                     | 0 7                |
|                | Thissur               | PETTAH / Sasthamangalam(plamadou)                                | 8                                  | 34                          | 16             | 105                     | 0 5                |
|                |                       | KSPCB, District Office, Poonkunnam                               | 5                                  | 20                          | 6              | 104                     | 0 3                |
|                |                       | Thissur/ Peringandoor  | 5                                  | 12                          | 5              | 74                      | 0 1                |
|                |                       | Wayanad  | 5                                  | 5                           | 5              | 104                     | 0 0                |
|                |                       |  | 5                                  | 5                           | 5              | 79                      | 0 0                |
| Madhya Pradesh | Amlai                 | HJI  | 15                                 | 26                          | 21             | 60                      | 0 2                |
|                |                       | OPM  | 14                                 | 22                          | 18             | 69                      | 0 2                |

Annexure 4: Location wise NO<sub>2</sub> - 2019

| State / UT     | City / town / village                    | Location   | Concentration in µg/m <sup>3</sup> |                             |                | No. of days in the year | Standard deviation |
|----------------|--|--|------------------------------------|-----------------------------|----------------|-------------------------|--------------------|
|                |  |  | Minimum (24-hourly average)        | Maximum (24-hourly average) | Annual Average |                         |                    |
| Madhya Pradesh | Bhopal                                   | Hamidia Road, MP Hastshilp Vikas Nigam                               | 5                                  | 39                          | 21             | 72                      | 0 7                |
|                |  | CETP Govindpura  | 8                                  | 32                          | 17             | 88                      | 0 5                |
|                |  | Nutan Subhash School, T.T. Nagar                                     | 5                                  | 11                          | 9              | 36                      | 0 2                |
|                |  | Kolar Thana, Kolar Road, Bhopal                                      | 5                                  | 53                          | 20             | 69                      | 0 10               |
|                |  | AKVN Office, Industrial Area Mandideep, Raisen                       | 9                                  | 56                          | 27             | 71                      | 0 8                |
|                |  | Barkatuallah University, Hoshgabad Road, Bhopal                      | 5                                  | 30                          | 13             | 74                      | 0 5                |
|                |  | Main Road, Hemu Colony, Bairagarh, Bhopal                            | 5                                  | 41                          | 17             | 77                      | 0 7                |
|                |  | Arera Colony   | 5                                  | 24                          | 10             | 82                      | 0 4                |
|                | Chhindwara                               | HIG -33, Front of Geetanali Park Housing Board Colony, Chadagaon     | 8                                  | 21                          | 14             | 96                      | 0 3                |
|                |  | Hindustan Unileaver, Narsinghpur Road,                               | 7                                  | 19                          | 14             | 88                      | 0 3                |
| Dewas          | Dewas                                    | EID Perry (I) Limited  | 16                                 | 35                          | 26             | 94                      | 0 6                |
|                |  | Dewas Metal Section  | 13                                 | 35                          | 26             | 93                      | 0 7                |
|                |  | Vikas Nagar  | 16                                 | 35                          | 26             | 96                      | 0 6                |
| Gwalior        | Dindayal Nagar                           | 8  | 44                                 | 23                          | 90             | 0 5                     |                    |
|                | Maharaj Bada                             | 10   | 46                                 | 24                          | 93             | 0 6                     |                    |
| Indore         | Indore                                   | M.P. Laghu Udyog, Pologround   | 7                                  | 67                          | 18             | 103                     | 0 7                |
|                |  | Kothari Market, M.G. Road  | 7                                  | 30                          | 17             | 109                     | 0 4                |
|                |  | Telephone Nagar, 26 A, Kanadia Road                                  | 12                                 | 33                          | 18             | 109                     | 0 3                |
| Jabalpur       | Vijay Nagar                              | 11   | 19                                 | 14                          | 101            | 0 2                     |                    |
|                | Udaipur Beverage Racchai                 | 15   | 22                                 | 19                          | 101            | 0 2                     |                    |
| Katni          | Katni                                    | HIG-4 Housing Board Colony Jhinhri, Katni                            | 17                                 | 36                          | 27             | 96                      | 0 4                |
|                |  | Calderys Works Refactories India Private Limited, Guest House, Katni | 21                                 | 36                          | 29             | 72                      | 0 3                |
| Nagda          | Chem. D. Labour Club                     | 7  | 25                                 | 12                          | 79             | 0 4                     |                    |
|                | B C I Labour Club                        | 8  | 21                                 | 13                          | 80             | 0 3                     |                    |
|                | Grasim Kalyan Kendra                     | 9  | 20                                 | 15                          | 75             | 0 3                     |                    |
| Prithampur     | Vikas Bhavan, Sector-2                   | 11   | 22                                 | 18                          | 94             | 0 3                     |                    |
|                | RCC Over Head Tank No. 1, Sector-3       | 11   | 24                                 | 18                          | 112            | 0 3                     |                    |
| Sagar          | Pt.Deendayal Nagar                       | 5  | 21                                 | 14                          | 96             | 0 4                     |                    |
|                | Katra Bazar, Sagar                       | 5  | 32                                 | 13                          | 101            | 0 4                     |                    |
| Satna          | Sub-divisional Office E/M Light Machnery | 7  | 20                                 | 11                          | 73             | 0 2                     |                    |
|                | MPPCB,Dharwari GaliNo.5,House No.318     | 5  | 34                                 | 10                          | 75             | 0 6                     |                    |
| Singrauli      | Jayant Township                          | 20   | 112                                | 49                          | 83             | 7 20                    |                    |
|                | N.T.P.C., Vidyanagar                     | 19   | 107                                | 49                          | 81             | 6 18                    |                    |
|                | Waidhan                                  | 19   | 94                                 | 47                          | 87             | 8 19                    |                    |
| Ujjain         | District Office                          | 10   | 15                                 | 13                          | 66             | 0 1                     |                    |
|                | Regional Office                          | 8  | 16                                 | 11                          | 75             | 0 2                     |                    |
|                | Mahakal Temple                           | 8  | 16                                 | 12                          | 51             | 0 2                     |                    |
|                | Chamunda Mata Chouraha                   | 10   | 21                                 | 12                          | 49             | 0 2                     |                    |
| Maharashtra    | Akola                                    | LRT Commerce College, Civil Lines, Akola                             | 12                                 | 15                          | 13             | 88                      | 0 1                |
|                |  | MIDC Water Work, Phash-II, MIDC Akola                                | 12                                 | 19                          | 15             | 143                     | 0 2                |
|                |  | College Of Engineering & Tech, Akola                                 | 12                                 | 19                          | 15             | 196                     | 0 1                |
|                | Ambernath                                | Ambernath Municipal Council Office                                   | 21                                 | 129                         | 66             | 131                     | 33 21              |
|                | Amravati                                 | Apurva Oil Industries, A-23, MIDC                                    | 9                                  | 25                          | 15             | 215                     | 0 3                |
|                |  | Elect. Dept., Govt College Engineering                               | 9                                  | 18                          | 14             | 92                      | 0 2                |
|                |  | Rajkamal Square, Vaneeta Samaj                                       | 9                                  | 25                          | 15             | 154                     | 0 3                |
|                | Aurangabad                               | S.B.E.S. College   | 19                                 | 68                          | 37             | 144                     | 0 11               |
|                |  | Collector Ofiice   | 10                                 | 65                          | 33             | 127                     | 0 10               |
|                |  | C.A.D.A. Ofiice, Garkheda  | 22                                 | 65                          | 37             | 91                      | 0 11               |
|                | Badlapur                                 | BIWA Office  | 19                                 | 120                         | 60             | 187                     | 32 20              |
|                | Bhiwandi                                 | Prematai Hall, Near Dhamankar Naka                                   | 31                                 | 69                          | 44             | 101                     | 0 8                |
|                |  | Fire Brigade Office, I.G.M. Hospital                                 | 31                                 | 69                          | 44             | 165                     | 0 7                |
|                |  | Regional Office, M.P.C. Board, Kalyan                                | 31                                 | 69                          | 43             | 237                     | 0 7                |
|                | Chandrapur                               | Grampanchat Ghughus  | 12                                 | 49                          | 28             | 94                      | 0 7                |
|                |  | M.I.D.C. Chandrapur  | 18                                 | 46                          | 29             | 101                     | 0 6                |
|                |  | Nagar Parishad   | 10                                 | 85                          | 30             | 163                     | 1 10               |
|                |  | Gadchandur Gram Panchayat, Rajura                                    | 18                                 | 47                          | 29             | 97                      | 0 6                |
|                |  | MIDC, Tadali   | 14                                 | 45                          | 29             | 97                      | 0 6                |
|                | Dombivali                                | Municipal Council, Ballarshah  | 19                                 | 43                          | 29             | 99                      | 0 5                |
|                | Dombivali                                | Dombivali MIDC Phase-II  | 20                                 | 120                         | 60             | 190                     | 29 18              |

Annexure 4: Location wise NO<sub>2</sub> - 2019

| State / UT  | City / town / village | Location   | Concentration in µg/m <sup>3</sup> |                             |                | No. of days in the year | Standard deviation |
|-------------|-----------------------|--|------------------------------------|-----------------------------|----------------|-------------------------|--------------------|
|             |                       |  | Minimum (24-hourly average)        | Maximum (24-hourly average) | Annual Average |                         |                    |
| Maharashtra | Jalgaon               | B. J. Market   | 28                                 | 36                          | 32             | 94                      | 0 2                |
|             |                       | Girna water tank                                     | 27                                 | 38                          | 32             | 213                     | 0 2                |
|             |                       | MIDC Jalgaon   | 27                                 | 38                          | 33             | 154                     | 0 2                |
|             | Jalna                 | Bachat Bhawan, Near S P Office                       | 33                                 | 51                          | 39             | 104                     | 0 4                |
|             |                       | Krishidhan Seeds Ltd, MIDC Area                      | 33                                 | 52                          | 40             | 172                     | 0 4                |
|             | Kolhapur              | University Campus, Shivaji University                | 10                                 | 33                          | 20             | 80                      | 0 5                |
|             |                       | Ruikar Trust, S.T. Stand                             | 10                                 | 82                          | 38             | 147                     | 1 18               |
|             |                       | Mahadwar Road, Near Mahalaxmi Temple                 | 10                                 | 82                          | 37             | 203                     | 1 16               |
|             | Latur                 | MIDC Water Works                                     | 18                                 | 27                          | 21             | 239                     | 0 2                |
|             |                       | Kshewraj Vidyalaya Shyam nagar                       | 18                                 | 27                          | 21             | 104                     | 0 2                |
|             |                       | Sidheshwar Sahakari Bank Ganjgolai                   | 18                                 | 27                          | 20             | 172                     | 0 2                |
|             | Mumbai                | Bank of India, Kalbadevi /Branch, Kalbadevi/ VARSOVA | 5                                  | 73                          | 27             | 84                      | 0 15               |
|             |                       | Parel TT, Ambedkar Road                              | 7                                  | 73                          | 30             | 88                      | 0 14               |
|             |                       | Worli  | 6                                  | 71                          | 26             | 87                      | 0 15               |
|             | Nagpur                | Institution of Engineers                             | 29                                 | 57                          | 39             | 100                     | 0 6                |
|             |                       | Govt. Polytechnic College, Sadar                     | 29                                 | 60                          | 41             | 96                      | 0 6                |
|             |                       | MIDC Office Hingana Road                             | 23                                 | 56                          | 42             | 100                     | 0 7                |
|             |                       | MIDC Industrial Area, MIDC Office, Hingna            | 5                                  | 63                          | 22             | 82                      | 0 11               |
|             |                       | Nagpur Coop Building, Maskasath, Itwari              | 6                                  | 41                          | 18             | 79                      | 0 7                |
|             |                       | NEERI Lab, Nehru Marg, Highway No. 7                 | 8                                  | 83                          | 21             | 74                      | 1 10               |
|             |                       | MPCB Office Premises, Civil Lines                    | 22                                 | 56                          | 38             | 321                     | 0 6                |
|             | Nashik                | R.T.O. Colony Tank                                   | 8                                  | 42                          | 22             | 154                     | 0 8                |
|             |                       | VIP Industrial Area, MIDC Satpura                    | 8                                  | 42                          | 22             | 104                     | 0 7                |
|             |                       | Nashik Municipal Council Building                    | 8                                  | 42                          | 22             | 218                     | 0 7                |
|             |                       | MPCB Sub R.O. Udyog Bhawan, Nashik                   | 6                                  | 72                          | 21             | 305                     | 0 8                |
|             | Navi Mumbai           | T.B.I.A, Rabale Airoli, TTC                          | 17                                 | 75                          | 48             | 103                     | 0 11               |
|             |                       | Dr. D.Y. Patil College, Nerul, TTC                   | 22                                 | 67                          | 45             | 229                     | 0 7                |
|             |                       | MPCB Lab, Mhape, TTC                                 | 35                                 | 73                          | 47             | 168                     | 0 8                |
|             |                       | CIDCO Nodal Office Kharghar                          | 35                                 | 68                          | 48             | 103                     | 0 9                |
|             |                       | Water Pump House, Panvel, Taloja                     | 35                                 | 75                          | 48             | 168                     | 0 8                |
|             |                       | MIDC Collom Facility Building, Taloja                | 28                                 | 75                          | 47             | 229                     | 0 4                |
|             | Pimpri-Chinchwad      | Bank of Baroda Builing, Near M.C Builiding           | 23                                 | 176                         | 78             | 199                     | 77 37              |
|             | Pune                  | Maratha Chamber of commerce, Bhosari                 | 21                                 | 178                         | 72             | 62                      | 21 29              |
|             |                       | State Electricity Board BLDG Nalstop                 | 25                                 | 254                         | 87             | 113                     | 59 38              |
|             |                       | Swargate Police Chawki                               | 48                                 | 178                         | 101            | 33                      | 27 26              |
|             | Sangli                | Udyog bhavan / SRO, MPCB Sangli                      | 10                                 | 87                          | 34             | 99                      | 1 16               |
|             |                       | Sangli- Miraj Primary school Building                | 10                                 | 102                         | 42             | 226                     | 22 22              |
|             |                       | Krishna Valley School                                | 10                                 | 102                         | 39             | 163                     | 11 20              |
|             | Solapur               | WIT Campus   | 31                                 | 39                          | 35             | 102                     | 0 2                |
|             |                       | Voronoko School / Chitale Clinic                     | 31                                 | 39                          | 35             | 144                     | 0 2                |
|             | Thane                 | Maternity Hospital, Dabhighat, Thane East            | 33                                 | 40                          | 37             | 24                      | 0 2                |
|             |                       | Shahu Market,Naupada, Thane West                     | 33                                 | 45                          | 37             | 49                      | 0 3                |
|             |                       | Kolshet and Balkum, Thane West                       | 32                                 | 45                          | 36             | 73                      | 0 3                |
|             | Ulhasnagar            | Smt. C. H. M. College Campus                         | 18                                 | 83                          | 48             | 99                      | 1 14               |
|             |                       | Octroi Naka, Pawai-Chowk, Vithalwadi                 | 24                                 | 110                         | 63             | 107                     | 15 17              |
| Manipur     | Imphal                | Secretariat Building                                 | 5                                  | 52                          | 21             | 57                      | 0 11               |
| Meghalaya   | Byrnihat              | EPIP, Ri-Bhoi district                               | 5                                  | 18                          | 13             | 121                     | 0 3                |
|             | Dawki                 | Terrace building, Jaintia Hills District             | 5                                  | 18                          | 13             | 121                     | 0 3                |
|             | Khliehriat            | O/o BDO, C & R.D. Block-Khliehriat                   | 5                                  | 15                          | 11             | 122                     | 0 3                |
|             | Nongstoin             | Office Premises of E.E, PHED                         | 5                                  | 21                          | 13             | 121                     | 0 3                |
|             | Shillong              | Boards Office Permisces, Lumpyngngad                 | 5                                  | 13                          | 7              | 106                     | 0 2                |
|             |                       | State Tuberculosis Hospital                          | 5                                  | 26                          | 20             | 121                     | 0 6                |
|             |                       | Forest Rest House, Polo Hills                        | 5                                  | 16                          | 11             | 117                     | 0 3                |
|             |                       | 41/2 mile, Mylliem Range Office                      | 5                                  | 16                          | 9              | 119                     | 0 3                |
|             | Tura                  | PHED, Araisimme, West Garo Hills District            | 5                                  | 16                          | 12             | 116                     | 0 3                |
|             | Umiam / Umsning       | Umiam Industrial Complex, Ri-Bhoi District           | 5                                  | 15                          | 12             | 120                     | 0 2                |
|             | Mizoram               | Khatla, M.G-Road, Mizoram SPCB                       | 5                                  | 15                          | 11             | 103                     | 0 3                |
|             |                       | Laipuitlang  | 5                                  | 5                           | 5              | 106                     | 0 0                |
|             |                       | Bawngkawn  | 5                                  | 17                          | 9              | 102                     | 0 2                |
|             |                       | Dawrpui Y.M.A, Building, Dawrpui                     | 5                                  | 21                          | 11             | 102                     | 0 3                |
|             |                       | Lengpui Airport, Model Veng, Lengpui                 | 5                                  | 5                           | 5              | 94                      | 0 0                |

Annexure 4: Location wise NO<sub>2</sub> - 2019

| State / UT | City / town / village | Location  | Concentration in µg/m <sup>3</sup> |                             |                | No. of days in the year | Standard deviation |
|------------|-----------------------|---|------------------------------------|-----------------------------|----------------|-------------------------|--------------------|
|            |                       |   | Minimum (24-hourly average)        | Maximum (24-hourly average) | Annual Average |                         |                    |
|            | Champhai              | D.T.O Office Building, Kahrawt veng                               | 5                                  | 5                           | 5              | 101                     | 0                  |
|            |                       | Lalzidinga building, Vengthlang                                   | 5                                  | 5                           | 5              | 101                     | 0                  |
|            | Kolasib               | H. Lalthuama Building, Project Veng                               | 5                                  | 5                           | 5              | 101                     | 0                  |
|            |                       | Synod Bookroom, Building Diakkawn                                 | 5                                  | 5                           | 5              | 101                     | 0                  |
|            | Lunglei               | Thangkhuma Building, Salem Veng                                   | 5                                  | 5                           | 5              | 96                      | 1                  |
|            |                       | K.Lalliantluanga, Chanmari I, Lunglei                             | 5                                  | 5                           | 5              | 96                      | 0                  |
| Nagaland   | Dimapur               | Bank Colony   | 5                                  | 32                          | 8              | 139                     | 0                  |
|            |                       | Dhobinala   | 5                                  | 24                          | 13             | 121                     | 0                  |
|            |                       | Signal point, Dimapur, Nagaland SPCB                              | 5                                  | 5                           | 5              | 103                     | 0                  |
|            |                       | House no-288, Tenyiphe-I, Chumukiedima, Dimapur                   | 5                                  | 25                          | 7              | 103                     | 4                  |
|            |                       | Vidya Bhawan School, Lane 17, Nagarjan, Kuda Village, Dimapur     | 5                                  | 5                           | 5              | 48                      | 1                  |
|            |                       | House no 24, Near community Hall, Viola colony, Dimapur           | 5                                  | 5                           | 5              | 48                      | 0                  |
|            |                       | ERJO Motors, Burma Camp, Dimapur                                  | 5                                  | 16                          | 9              | 48                      | 4                  |
|            | Kohima                | Opposite NST Office   | 5                                  | 10                          | 5              | 138                     | 1                  |
|            |                       | Opposite War Cemetery   | 5                                  | 12                          | 5              | 121                     | 1                  |
| Odisha     | Angul                 | Industrial Estate   | 18                                 | 33                          | 27             | 102                     | 3                  |
|            |                       | NALCO Township  | 22                                 | 34                          | 26             | 102                     | 2                  |
|            | Balasore              | Sahadevkhunta   | 10                                 | 12                          | 11             | 104                     | 0                  |
|            |                       | DIC office  | 10                                 | 13                          | 11             | 104                     | 0                  |
|            | Berhampur             | Rasalpur near Balgopalpur I/A                                     | 11                                 | 14                          | 11             | 104                     | 1                  |
|            |                       | Regional Office Orissa SPCB                                       | 13                                 | 46                          | 19             | 107                     | 4                  |
|            | Bhubneshwar           | Capital Police Station  | 11                                 | 37                          | 19             | 97                      | 5                  |
|            |                       | IRC Village   | 12                                 | 24                          | 16             | 94                      | 3                  |
|            |                       | Office Premises Bhubaneswar                                       | 11                                 | 22                          | 16             | 100                     | 2                  |
|            |                       | Water works, Palasuni, Rasalgarh                                  | 10                                 | 51                          | 17             | 69                      | 5                  |
|            |                       | Patrapara, Khandagiri   | 12                                 | 33                          | 14             | 101                     | 3                  |
|            | Boudh                 | Chandrashekharpur   | 13                                 | 22                          | 15             | 91                      | 2                  |
|            |                       | Govt. Hospital Bonai At/Po/PS-Bonai Dist-Sudargarh                | 11                                 | 26                          | 16             | 104                     | 5                  |
|            | Cuttack               | Traffic Tower, Badambadi  | 14                                 | 31                          | 19             | 58                      | 2                  |
|            |                       | P.H.D Office Barabati   | 13                                 | 33                          | 18             | 104                     | 3                  |
|            |                       | R.O. Cuttack Office, Surya Vihar                                  | 14                                 | 38                          | 22             | 104                     | 3                  |
|            | Jharsuguda            | R.O. Building Cox colony  | 11                                 | 43                          | 13             | 108                     | 3                  |
|            |                       | TRL Colony, M/s. TRL Krosaki Refractories Ltd. PO: Bhepahar,      | 11                                 | 27                          | 18             | 106                     | 3                  |
|            | Kalinga Nagar         | Over the Guest House of M/s NINL                                  | 13                                 | 22                          | 18             | 55                      | 2                  |
|            |                       | Maintenance Office of M/s NINL, Duburi                            | 11                                 | 27                          | 17             | 77                      | 3                  |
|            | Konark                | Konark Police Station   | 11                                 | 16                          | 13             | 101                     | 1                  |
|            | Paradeep              | On roof of PPT Staff Quarter                                      | 6                                  | 16                          | 11             | 101                     | 2                  |
|            |                       | On roof of PPL Guest  | 6                                  | 20                          | 10             | 101                     | 3                  |
|            |                       | On roof of STP building IFFCO                                     | 6                                  | 12                          | 10             | 83                      | 1                  |
|            | Puri                  | Sadar police station  | 13                                 | 18                          | 15             | 46                      | 1                  |
|            |                       | Town Police Station   | 13                                 | 22                          | 15             | 75                      | 1                  |
|            | Rajgangpur            | DISIR, Rajgangpur   | 11                                 | 37                          | 19             | 103                     | 8                  |
|            | Rayagada              | Regional Office Orissa SPCB                                       | 11                                 | 22                          | 17             | 104                     | 2                  |
|            |                       | LPS High School, Jaykaypur  | 12                                 | 21                          | 17             | 101                     | 2                  |
|            | Rourkela              | Regional Office, ORPB   | 10                                 | 22                          | 14             | 104                     | 2                  |
|            |                       | Kalunga Industrial Estate   | 9                                  | 26                          | 17             | 104                     | 4                  |
|            |                       | IDL Police Out-post, Sonaparbat                                   | 10                                 | 16                          | 11             | 104                     | 1                  |
|            | Sambalpur             | Kuarmunda, Sundergarh   | 8                                  | 22                          | 12             | 104                     | 2                  |
|            |                       | Filter Plant, PHD Office, Modipara                                | 19                                 | 46                          | 24             | 105                     | 3                  |
|            |                       | Coal Field Area   | 23                                 | 35                          | 28             | 104                     | 2                  |
|            | Talcher               | T.T.P.S.Colony  | 24                                 | 33                          | 29             | 104                     | 2                  |
| Puducherry | Karaikal              | B.Ed College (PKCE), Nehru Nagar                                  | 5                                  | 11                          | 5              | 88                      | 1                  |
|            |                       | Govt. Tourist Home, Kovilpathu                                    | 5                                  | 10                          | 6              | 91                      | 1                  |
|            |                       | M/s Puducherry Power Corporation Limited, Polagam, T.R. Pattinam, | 5                                  | 9                           | 5              | 82                      | 1                  |
|            | Puducherry            | DSTC Office Upstairs, PHB 3rd Floor, AnnaNagar                    | 9                                  | 17                          | 13             | 92                      | 1                  |
|            |                       | PIPDIC Ind. Estate Mettupalayam                                   | 10                                 | 16                          | 13             | 87                      | 1                  |
|            |                       | Chamber Of Commerce   | 6                                  | 14                          | 10             | 85                      | 1                  |

Annexure 4: Location wise NO<sub>2</sub> - 2019

| State / UT | City / town / village      | Location  | Concentration in µg/m <sup>3</sup> |                             |                | No. of days in the year | Standard deviation |    |
|------------|----------------------------|---|------------------------------------|-----------------------------|----------------|-------------------------|--------------------|----|
|            |                            |   | Minimum (24-hourly average)        | Maximum (24-hourly average) | Annual Average |                         |                    |    |
| Punjab     | Aligarh (Jagraon)          | Forest Office, Vill:Aligarh, Teh:Jagraon                      | 9                                  | 37                          | 17             | 103                     | 0                  | 5  |
|            | Amritsar                   | R.O. Focal Point (earlier Nagina soap factory)                | 25                                 | 38                          | 33             | 62                      | 0                  | 3  |
|            |                            | Vinod Chilling Center / Kochar Bhavan (earlier A-1,Platers)   | 26                                 | 46                          | 35             | 60                      | 0                  | 3  |
|            | Aspal Khurd (Tapa)         | Vill:Aspal Khurd, Teh:Tapa                                    | 9                                  | 18                          | 12             | 124                     | 0                  | 2  |
|            | Bara Pind (Goraya)         | Vill:Bara Pind, Teh:Goraya                                    | 10                                 | 26                          | 20             | 83                      | 0                  | 4  |
|            | Bhatinda                   | Bathinda Milk Producers, Dabwali Road                         | 5                                  | 21                          | 13             | 84                      | 0                  | 2  |
|            | Binjon (Garshankar)        | CHC, Vill:Binjon, Teh: Garshankar                             | 9                                  | 19                          | 14             | 80                      | 0                  | 2  |
|            | Bishanpura (Payal)         | Longowalia Yarns (Unit-II), Vill:Bishanpura, Teh: Payal       | 9                                  | 39                          | 21             | 93                      | 0                  | 6  |
|            | Changal (Sangrur)          | Mastuana Sahib, Vill:Changal, Teh:Sangrur                     | 6                                  | 26                          | 13             | 106                     | 0                  | 3  |
|            | Chowkimann (Jagraon)       | Ludhiana College of Engineering, Vill:Chowkimann, Teh:Jagraon | 9                                  | 32                          | 19             | 102                     | 0                  | 4  |
|            | Dera Baba Nanak            | C-PYTE Building   | 11                                 | 17                          | 13             | 67                      | 0                  | 1  |
|            | Dera Bassi                 | Punjab Chem and Crop Protection, Bhanakarpur Rd               | 9                                  | 26                          | 13             | 107                     | 0                  | 3  |
|            |                            | Winsome Yarns Ltd., Barwala Road                              | 9                                  | 18                          | 12             | 114                     | 0                  | 2  |
|            | Fatehpur (Samana)          | Baba Banda Singh Bahadur College, Vill:Fatehpur, Teh:Samana   | 10                                 | 13                          | 11             | 38                      | 0                  | 1  |
|            | Gobindgarh                 | Modi Oil and General Mills, Mandi                             | 13                                 | 44                          | 36             | 126                     | 0                  | 6  |
|            |                            | Raj Steel Rolling Mills, Mandi                                | 13                                 | 40                          | 35             | 133                     | 0                  | 4  |
|            |                            | United Rolling Mills, Mandi Gobindgarh                        | 15                                 | 98                          | 36             | 130                     | 1                  | 8  |
|            | Guru Ki Dhab (Kotkapura)   | Vil:Guru Ki Dhab / Basti Himmatpura, Teh:Kotkapura            | 7                                  | 26                          | 13             | 22                      | 0                  | 5  |
|            | Jaito Sarja (Batala)       | Royal Nursing College, Vill: Jaito Sarja, Teh: Batala         | 11                                 | 18                          | 14             | 37                      | 0                  | 1  |
|            | Jalandhar                  | Municipal Council Tubewell No. 27                             | 18                                 | 49                          | 25             | 81                      | 0                  | 5  |
|            |                            | Regional Office   | 18                                 | 47                          | 24             | 73                      | 0                  | 5  |
|            |                            | Punjab Maltex , Kapurthala Road                               | 12                                 | 40                          | 22             | 59                      | 0                  | 5  |
|            |                            | Focal Point   | 20                                 | 34                          | 25             | 62                      | 0                  | 4  |
|            | Khanna                     | Markfed Vanaspati, Khanna                                     | 7                                  | 73                          | 26             | 112                     | 0                  | 10 |
|            |                            | AS School, Khanna   | 11                                 | 45                          | 27             | 116                     | 0                  | 7  |
|            | Kharaori (Sirhind)         | Vill:Kharaori, Teh:Sirhind                                    | 10                                 | 29                          | 13             | 126                     | 0                  | 5  |
|            | Kotladoom (Ajnala)         | Satyan College, Ramtirath Road, Vill: Kotladoom, Teh: Ajnala  | 11                                 | 18                          | 13             | 62                      | 0                  | 1  |
|            | Lakho ke Behram (Ferozpur) | Vill:Lakho ke Behram, Teh:Ferozpur                            | 5                                  | 12                          |                | 11                      | 0                  |    |
|            | Ludhiana                   | Bharat Nagar Chowk / RO Gill Road                             | 13                                 | 39                          | 23             | 120                     | 0                  | 6  |
|            |                            | Nahar Spining Mills, Dholewal Chawk                           | 11                                 | 46                          | 25             | 126                     | 0                  | 7  |
|            |                            | Ludhiana Coop. Milk Producer, Ferozpur Rd                     | 5                                  | 48                          | 24             | 137                     | 0                  | 7  |
|            |                            | PPCB Office Building, Vishavkarma Chowk                       | 20                                 | 86                          | 32             | 131                     | 1                  | 8  |
|            | Mrar Kalan (Muktsar)       | Vill: Mrar Kalan, Teh:Muktsar                                 | 10                                 | 26                          | 14             | 42                      | 0                  | 5  |
|            | Mukandpur (Nawashahar)     | Govt. Senior Sec. School, Vill:Mukandpur, Teh:Nawashahar      | 13                                 | 26                          | 17             | 78                      | 0                  | 3  |
|            | Mureedke (Batala)          | Johal Farm, Vill: Mureedke, Teh: Batala                       | 8                                  | 18                          | 12             | 98                      | 0                  | 2  |
|            | Naudhrani (Malerkotla)     | Vill:Naudhrani, Teh:Malerkotla                                | 9                                  | 25                          | 13             | 104                     | 0                  | 3  |
|            | Naya Nangal                | Punjab Alkalies & Chemicals Ltd                               | 9                                  | 22                          | 12             | 95                      | 0                  | 2  |
|            |                            | M/s NFL Guest House,Naya Nangal                               | 9                                  | 23                          | 12             | 108                     | 0                  | 2  |
|            | Patiala                    | Ceylon Industries, Factory Area, Patiala                      | 9                                  | 30                          | 12             | 128                     | 0                  | 2  |
|            |                            | Fire Brigade Station, Bahera Road, Patiala                    | 10                                 | 23                          | 12             | 132                     | 0                  | 3  |
|            | Peer Mohammad (Jalalabad)  | Vill:Peer Mohammad, Teh:Jalalabad                             | 10                                 | 13                          | 12             | 23                      | 0                  | 1  |

Annexure 4: Location wise NO<sub>2</sub> - 2019

| State / UT | City / town / village  | Location   | Concentration in µg/m <sup>3</sup> |                             |                | No. of days in the year | Standard deviation |    |
|------------|------------------------|--|------------------------------------|-----------------------------|----------------|-------------------------|--------------------|----|
|            |                        |  | Minimum (24-hourly average)        | Maximum (24-hourly average) | Annual Average |                         |                    |    |
|            | Poohli (Bhatinda)      | Vill: Poohli, Teh:Bhatinda   | 10                                 | 26                          | 15             | 23                      | 0                  | 5  |
|            | Qila Bharian (Sangrur) | Gurdwara Gangsar Sahib, Vill:Qila Bharian, Teh:Sangrur   | 10                                 | 27                          | 13             | 112                     | 0                  | 3  |
|            | Rakhra (Patiala)       | Shree Ganesh Group of Institute, Vill:Rakhra, The:Patiala  | 11                                 | 13                          | 12             | 53                      | 0                  | 1  |
|            | Rohila (Samrala)       | Gopimal Kaur Sain Industries Pvt. Ltd, Vil:Rohila, Teh:Samrala                                       | 9                                  | 42                          | 20             | 120                     | 0                  | 7  |
|            | Tirathpur (Amritsar I) | United ITI, Vill: Tirathpur, Teh:Amritsar I (earlier Sriguru Harkishan Public School,Rasulpur Kalan) | 10                                 | 14                          | 13             | 58                      | 0                  | 1  |
| Rajasthan  | Alwar                  | Rajasthan State Pollution Control Board  | 22                                 | 40                          | 30             | 98                      | 0                  | 5  |
|            |                        | Gaurav Solvex Ltd. MIA   | 28                                 | 45                          | 37             | 103                     | 0                  | 4  |
|            |                        | RIICO Pump House, MIA  | 27                                 | 45                          | 34             | 105                     | 0                  | 4  |
|            | Bharatpur              | Khadi Gramoday Samiti  | 23                                 | 38                          | 27             | 97                      | 0                  | 3  |
|            |                        | RIICO office Building  | 5                                  | 34                          | 25             | 99                      | 0                  | 3  |
|            |                        | RO, Building   | 20                                 | 30                          | 24             | 102                     | 0                  | 1  |
|            | Bhiwadi                | R.O.Building   | 15                                 | 78                          | 44             | 101                     | 0                  | 12 |
|            |                        | UIT Guest House  | 31                                 | 79                          | 53             | 38                      | 0                  | 11 |
|            |                        | Uttam Strips Ltd   | 12                                 | 79                          | 42             | 97                      | 0                  | 14 |
|            | Chittorgarh            | Regional Office building, RSPCB, Near FCI Godown, Chnaderiya   | 18                                 | 91                          | 29             | 102                     | 1                  | 9  |
|            |                        | Veterinary Hospital, Meeranagar  | 15                                 | 83                          | 27             | 97                      | 2                  | 12 |
|            |                        | PHED Pump House, Segawa  | 14                                 | 64                          | 23             | 97                      | 0                  | 7  |
|            | Jaipur                 | Ajmeri Gate  | 17                                 | 50                          | 34             | 107                     | 0                  | 6  |
|            |                        | RJPB Office,Jhalana Doongari   | 13                                 | 33                          | 21             | 104                     | 0                  | 4  |
|            |                        | District Education Officer, Chandpole  | 22                                 | 72                          | 34             | 101                     | 0                  | 7  |
|            |                        | RIICO Office, M.I.A.   | 15                                 | 42                          | 23             | 104                     | 0                  | 6  |
|            |                        | RSPCB, Vidyadhar Nagar   | 5                                  | 50                          | 27             | 104                     | 0                  | 6  |
|            |                        | VKIA   | 16                                 | 55                          | 31             | 104                     | 0                  | 8  |
|            |                        | 22,Godam, RIICO Office   | 14                                 | 40                          | 24             | 107                     | 0                  | 5  |
|            |                        | Mansarovar Nagar Niigam  | 15                                 | 39                          | 24             | 99                      | 0                  | 5  |
|            |                        | RIICO Office Sitapura Industrial Area  | 16                                 | 47                          | 27             | 103                     | 0                  | 6  |
|            | Jodhpur                | DIC Office, Industrial Estate  | 10                                 | 53                          | 25             | 86                      | 0                  | 9  |
|            |                        | Sojati Gate  | 11                                 | 56                          | 26             | 80                      | 0                  | 9  |
|            |                        | Basni Industrial Area, RIICO Office  | 10                                 | 50                          | 25             | 87                      | 0                  | 8  |
|            |                        | Maha Mandir Police Thane   | 11                                 | 58                          | 26             | 84                      | 0                  | 9  |
|            |                        | Office of Housing Board, Chopasani Road  | 10                                 | 53                          | 25             | 82                      | 0                  | 9  |
|            |                        | Shastri Nagar Police Thana   | 11                                 | 57                          | 26             | 87                      | 0                  | 9  |
|            |                        | Kudi Mahila Thana  | 17                                 | 43                          | 25             | 50                      | 0                  | 7  |
|            |                        | Sangariya Police Choki   | 18                                 | 44                          | 27             | 47                      | 0                  | 7  |
|            |                        | SoorsagarThana   | 15                                 | 52                          | 26             | 47                      | 0                  | 8  |
|            | Kota                   | Regional Office, RJPB, Anantpura   | 19                                 | 32                          | 24             | 99                      | 0                  | 3  |
|            |                        | Municipal Corporation Building   | 19                                 | 31                          | 24             | 104                     | 0                  | 3  |
|            |                        | Samcore Glass Ltd.   | 19                                 | 37                          | 24             | 109                     | 0                  | 3  |
|            |                        | FireStation Nagar Nigam Shrinathpuram  | 20                                 | 31                          | 25             | 104                     | 0                  | 3  |
|            |                        | RajasthanTechnical University,Rawatbhata   | 19                                 | 33                          | 25             | 103                     | 0                  | 4  |
|            |                        | Sewage Treatment Plant, Balita, Kota   | 18                                 | 45                          | 24             | 107                     | 0                  | 3  |
|            | Udaipur                | Ambamata   | 11                                 | 44                          | 27             | 103                     | 0                  | 7  |
|            |                        | Town Hall  | 15                                 | 52                          | 32             | 105                     | 0                  | 8  |
|            |                        | Regional Office,MIA  | 13                                 | 53                          | 33             | 104                     | 0                  | 8  |
| Sikkim     | Chungthang             | Chungthang   | 5                                  | 5                           | 5              | 90                      | 0                  | 0  |
|            | Gangtok                | White Hall Complex, Tasi view point  | 5                                  | 25                          | 10             | 77                      | 0                  | 6  |
|            | Mangan                 | Mangan Police Station  | 5                                  | 8                           | 5              | 101                     | 0                  | 1  |
|            | Namchi                 | Namchi   | 5                                  | 8                           | 5              | 99                      | 0                  | 1  |
|            | Pelling                | The Pelling Girls Hostel   | 5                                  | 11                          | 5              | 93                      | 0                  | 1  |
|            | Rangpo                 | Rangpo Fire Station  | 5                                  | 18                          | 8              | 94                      | 0                  | 3  |
|            | Ravangla               | Ravangla Range Office  | 5                                  | 8                           | 5              | 98                      | 0                  | 1  |
|            | Singtam                | Police Station Building  | 5                                  | 8                           | 6              | 93                      | 0                  | 1  |
| Tamilnadu  | Chennai                | Govt. High School, Manali  | 15                                 | 21                          | 18             | 58                      | 0                  | 2  |
|            |                        | Kathivakkam  | 14                                 | 20                          | 17             | 62                      | 0                  | 2  |
|            |                        | Thiruvottiyur  | 14                                 | 19                          | 16             | 62                      | 0                  | 2  |
|            |                        | Madras Medical College   | 5                                  | 65                          | 21             | 86                      | 0                  | 12 |
|            |                        | NEERI, CSIR CampusTaramani   | 5                                  | 43                          | 16             | 86                      | 0                  | 8  |

Annexure 4: Location wise NO<sub>2</sub> - 2019

| State / UT    | City / town / village | Location   | Concentration in µg/m <sup>3</sup> |                             |                | No. of days in the year | Standard deviation |    |
|---------------|-----------------------|--|------------------------------------|-----------------------------|----------------|-------------------------|--------------------|----|
|               |                       |  | Minimum (24-hourly average)        | Maximum (24-hourly average) | Annual Average |                         |                    |    |
|               |                       | Thiruvottiyur Municipal Office                                     | 5                                  | 68                          | 23             | 87                      | 0                  | 12 |
|               |                       | Adiyar   | 11                                 | 20                          | 15             | 52                      | 0                  | 2  |
|               |                       | Kilpauk  | 14                                 | 26                          | 19             | 66                      | 0                  | 2  |
|               |                       | Thiyagaraya Nagar  | 14                                 | 24                          | 20             | 68                      | 0                  | 2  |
|               |                       | Nunbakgum  | 15                                 | 29                          | 20             | 60                      | 0                  | 2  |
|               | Coimbatore            | Anna Nagar   | 15                                 | 27                          | 19             | 53                      | 0                  | 2  |
|               |                       | Poniarajapuram, On the top of DEL                                  | 14                                 | 19                          | 16             | 86                      | 0                  | 1  |
|               |                       | G.D.Matric Hr.Sec.School   | 14                                 | 22                          | 18             | 69                      | 0                  | 2  |
|               | Cuddalore             | SIDCO Office, Coimbatore/ Kurichi                                  | 16                                 | 25                          | 19             | 77                      | 0                  | 2  |
|               |                       | Eachangadu Village   | 18                                 | 19                          | 18             | 94                      | 0                  | 0  |
|               |                       | SIPCOT (Project Office)  | 15                                 | 18                          | 17             | 81                      | 0                  | 0  |
|               |                       | DEE Office, Cuddalore  | 17                                 | 25                          | 21             | 75                      | 0                  | 2  |
|               |                       | Highway (Project -I) Building                                      | 13                                 | 21                          | 18             | 70                      | 0                  | 2  |
|               | Madurai               | Fenner (I) Ltd. Kochadai   | 14                                 | 23                          | 19             | 67                      | 0                  | 2  |
|               |                       | Kunnathur Chatram Avvai Girls HS School                            | 14                                 | 22                          | 18             | 75                      | 0                  | 1  |
|               |                       | Raman Nagar  | 17                                 | 33                          | 21             | 79                      | 0                  | 3  |
|               | Mettur                | SIDCO  | 18                                 | 36                          | 22             | 77                      | 0                  | 4  |
|               |                       | Salem  | 8                                  | 42                          | 21             | 77                      | 0                  | 5  |
|               | Trichy                | Gandhi Market  | 13                                 | 21                          | 18             | 68                      | 0                  | 2  |
|               |                       | Main Guard Gate  | 14                                 | 22                          | 19             | 67                      | 0                  | 2  |
|               |                       | Bishop Heber College   | 12                                 | 22                          | 16             | 75                      | 0                  | 2  |
|               |                       | Golden Rock  | 13                                 | 22                          | 17             | 72                      | 0                  | 2  |
|               |                       | Central Bus Stand  | 14                                 | 24                          | 20             | 69                      | 0                  | 2  |
|               | Tuticorin             | Fisheries College, Tuticorin Sipcot                                | 8                                  | 20                          | 11             | 72                      | 0                  | 1  |
|               |                       | Raja Agencies  | 9                                  | 22                          | 12             | 66                      | 0                  | 2  |
|               |                       | AVM Jewellery Building   | 7                                  | 20                          | 11             | 83                      | 0                  | 2  |
|               | Adilabad              | Building of SCCL Manadamarri Club Mandamarri, Mancherial           | 23                                 | 27                          | 25             | 108                     | 0                  | 1  |
|               | Hyderabad             | Balanagar  | 22                                 | 123                         | 51             | 106                     | 5                  | 16 |
|               |                       | Tarnaka, NEERI Lab. IICT Campus                                    | 5                                  | 41                          | 15             | 89                      | 0                  | 12 |
|               |                       | Nacharam, Industrial Estate  | 5                                  | 45                          | 15             | 88                      | 0                  | 11 |
|               |                       | ABIDS Circle General Post Office                                   | 5                                  | 42                          | 16             | 88                      | 0                  | 12 |
|               |                       | Uppal, Modern Foods & Industries IDA                               | 21                                 | 73                          | 44             | 112                     | 0                  | 10 |
|               |                       | Jubilee Hills  | 23                                 | 83                          | 42             | 119                     | 1                  | 10 |
|               |                       | Paradise   | 24                                 | 96                          | 51             | 119                     | 4                  | 13 |
|               |                       | Charminar  | 17                                 | 68                          | 38             | 119                     | 0                  | 9  |
|               |                       | Zoo Park   | 9                                  | 141                         | 48             | 115                     | 13                 | 30 |
|               |                       | Jeedimetla Industrial Estate, Rangareddy Distt.                    | 18                                 | 77                          | 47             | 119                     | 0                  | 12 |
|               | Karimnagar            | On the terrace of the DIC building, Karimnagar                     | 45                                 | 68                          | 55             | 86                      | 0                  | 5  |
|               | Khammam               | CER Club Khammam   | 28                                 | 74                          | 53             | 101                     | 0                  | 8  |
|               |                       | Jalasoudha building  | 44                                 | 66                          | 52             | 102                     | 0                  | 5  |
|               | Kothur                | Mehaboobnagar  | 47                                 | 67                          | 59             | 104                     | 0                  | 4  |
|               | Nalgonda              | AP PCB Nalgonda  | 23                                 | 28                          | 25             | 99                      | 0                  | 1  |
|               |                       | M/s. Sriniv Pharmaceuticals pvt. Ltd.Choutuppal (V & M)            | 24                                 | 29                          | 26             | 99                      | 0                  | 1  |
|               |                       | Nizamabad  | subashnagar,nizamabad dist         | 23                          | 27             | 25                      | 99                 | 0  |
|               | Patncheru             | Police Station, Medak, Ramachadrapuram                             | 22                                 | 28                          | 25             | 93                      | 0                  | 1  |
|               | Ramagundam            | Godavarikhani, Ramagundam, Karimnagar                              | 45                                 | 65                          | 55             | 97                      | 0                  | 5  |
|               | Sangareddy            | Pashamylaram/Municipal Office                                      | 7                                  | 109                         | 39             | 104                     | 4                  | 20 |
|               |                       | Regional office Building of SANGAREDDY                             | 23                                 | 27                          | 25             | 98                      | 0                  | 1  |
|               |                       | M/s. Mylan Industries, Gaddapothara                                | 24                                 | 29                          | 25             | 99                      | 0                  | 1  |
|               | Warangal              | KUDA Office, Hanumakonda   | 33                                 | 66                          | 52             | 99                      | 0                  | 5  |
|               |                       | Mee-Seva Building ,Municipal Complex                               | 40                                 | 60                          | 51             | 98                      | 0                  | 4  |
| Tripura       | Agartala              | SPCB, Pavivesh Bhawan, Pandit Nehru Complex, Gorkhabasti, Kunjaban | 8                                  | 15                          | 10             | 83                      | 0                  | 2  |
|               |                       | Bordowali Bipani Bitan, Agartala MC, Bordowali, Near Nagerjala     | 9                                  | 16                          | 11             | 83                      | 0                  | 2  |
| Uttar Pradesh | Agra                  | Regional Office, Bodla   | 10                                 | 33                          | 21             | 90                      | 0                  | 5  |
|               |                       | Nunhai   | 11                                 | 45                          | 29             | 94                      | 0                  | 8  |
|               |                       | Taj Mahal  | 5                                  | 71                          | 19             | 298                     | 0                  | 12 |
|               |                       | DIC Nunhai   | 5                                  | 69                          | 28             | 126                     | 0                  | 12 |
|               |                       | Etmad-uddaulah   | 5                                  | 67                          | 27             | 131                     | 0                  | 12 |

Annexure 4: Location wise NO<sub>2</sub> - 2019

| State / UT    | City / town / village | Location  | Concentration in µg/m <sup>3</sup> |                             |                | No. of days in the year | Standard deviation |
|---------------|-----------------------|---|------------------------------------|-----------------------------|----------------|-------------------------|--------------------|
|               |                       |   | Minimum (24-hourly average)        | Maximum (24-hourly average) | Annual Average |                         |                    |
| Allahabad     |                       | Rambagh   | 5                                  | 58                          | 23             | 124                     | 0 12               |
|               |                       | Square crossing circle of Laxmi Talkies                             | 10                                 | 51                          | 39             | 106                     | 0 9                |
|               |                       | Bharat Yantra Nigam Ltd   | 7                                  | 57                          | 34             | 108                     | 0 9                |
|               |                       | Alopibagh/Sewage Pumping Stations                                   | 29                                 | 88                          | 49             | 76                      | 1 11               |
|               |                       | Jhonstonganj/co-operative Bank                                      | 26                                 | 72                          | 42             | 98                      | 0 8                |
|               |                       | Rambagh/Parag Dairy   | 26                                 | 69                          | 46             | 102                     | 0 9                |
| Anpara        |                       | Anpara Colony, Sonabhadra   | 19                                 | 32                          | 29             | 95                      | 0 3                |
|               |                       | Renusagar Colony, Sonabhadra  | 21                                 | 32                          | 28             | 97                      | 0 2                |
| Baghpat       |                       | Sarvodaya Hospital, Tatiri Merrut, Baghpat Road                     | 10                                 | 54                          | 21             | 93                      | 0 8                |
|               |                       | Weavetex Overseas Hostel, Khekra, Baghpat                           | 10                                 | 57                          | 21             | 94                      | 0 8                |
| Bareily       |                       | IVRI Izatnaga   | 18                                 | 38                          | 27             | 107                     | 0 5                |
|               |                       | Indian oetrol pump, Civil Line                                      | 25                                 | 65                          | 36             | 107                     | 0 6                |
| Firozabad     |                       | Center for Development of Glass Industry                            | 17                                 | 42                          | 31             | 104                     | 0 5                |
|               |                       | Tilak Nagar   | 20                                 | 41                          | 31             | 104                     | 0 5                |
|               |                       | Raza ka Tal   | 22                                 | 41                          | 31             | 103                     | 0 4                |
| Gajraula      |                       | Raunaq Auto Ltd, J.P. Nagar   | 16                                 | 55                          | 35             | 94                      | 0 9                |
|               |                       | Indira Chowk, J.P. Nagar  | 14                                 | 67                          | 40             | 92                      | 0 10               |
| Ghaziabad     |                       | Atlas Cycles Industries, Sahibabad Ind. area                        | 23                                 | 65                          | 46             | 93                      | 0 10               |
|               |                       | Bulandshaar Road Industrial Area                                    | 21                                 | 61                          | 43             | 87                      | 0 9                |
|               |                       | Khora Colony, Ghaziabad   | 10                                 | 85                          | 26             | 86                      | 1 13               |
|               |                       | Vinoba Bhave Park, Lohia Nagar, Ghaziabad                           | 10                                 | 82                          | 27             | 85                      | 1 13               |
| Gorakpur      |                       | M. M. Engineering College, Gorakhpur                                | 10                                 | 42                          | 19             | 93                      | 0 9                |
|               |                       | India Glycol Ltd. Gida, Gorakhpur                                   | 28                                 | 80                          | 48             | 101                     | 1 11               |
|               |                       | Jalkal, Municipal Corporation, Golghar                              | 20                                 | 75                          | 37             | 92                      | 0 14               |
| Greater Noida |                       | Holland Tractor, Greater Noida                                      | 10                                 | 87                          | 26             | 88                      | 1 14               |
|               |                       | Honda Power, Greater Noida  | 9                                  | 86                          | 26             | 88                      | 1 14               |
| Hapur         |                       | Srinagar Colony, Railway Road, Hapur                                | 13                                 | 41                          | 23             | 89                      | 0 6                |
|               |                       | Jindal Pipes Ltd, Hapur   | 13                                 | 42                          | 27             | 70                      | 0 6                |
| Jhansi        |                       | Manik Chawk / Jal chauraha  | 11                                 | 33                          | 19             | 117                     | 0 3                |
|               |                       | Veeranga Nagar  | 9                                  | 30                          | 17             | 116                     | 0 2                |
| Kanpur        |                       | Forest & Training Centre, Kidwai Nagar                              | 34                                 | 63                          | 48             | 93                      | 0 7                |
|               |                       | Chamber Of Commerce Darshanpurwa / Deputy ka Parao                  | 35                                 | 69                          | 53             | 94                      | 0 7                |
|               |                       | Associated Chem Pvt Ltd, Fazalganj, Panki, Site-5                   | 37                                 | 66                          | 54             | 83                      | 0 7                |
|               |                       | Head Post Office, Govind Nagar / Dabauli / Shastri NGR              | 33                                 | 59                          | 52             | 83                      | 0 6                |
|               |                       | Jajmau / Awas Vikas   | 41                                 | 63                          | 50             | 93                      | 0 5                |
|               |                       | I.I.T. Campus, Kanpur   | 9                                  | 24                          | 14             | 100                     | 0 2                |
|               |                       | IIT 12 parameter  | 7                                  | 66                          | 14             | 164                     | 0 6                |
|               |                       | Dada Nagar, Kanpur  | 15                                 | 55                          | 41             | 91                      | 0 7                |
|               |                       | Ramadevi, Kanpur  | 21                                 | 75                          | 36             | 89                      | 0 7                |
| Khurja        |                       | Central Glass & Ceramic Research Institute                          | 18                                 | 24                          | 20             | 95                      | 0 1                |
|               |                       | Ahirpara  | 18                                 | 21                          | 19             | 92                      | 0 1                |
| Lucknow       |                       | Mahanagar   | 21                                 | 43                          | 30             | 225                     | 0 5                |
|               |                       | Chandganj Garden, Aliganj   | 21                                 | 43                          | 31             | 270                     | 0 5                |
|               |                       | Kapoor Hotel, Hazratganj  | 21                                 | 43                          | 31             | 187                     | 0 5                |
|               |                       | Talkatora   | 20                                 | 43                          | 30             | 268                     | 0 5                |
|               |                       | Aminabad / S.M.K Chowk  | 20                                 | 43                          | 31             | 279                     | 0 5                |
|               |                       | Nagar Nigam   | 20                                 | 43                          | 30             | 268                     | 0 5                |
|               |                       | Ansal Technical Institute Campus, Ansal API                         | 20                                 | 43                          | 30             | 266                     | 0 5                |
|               |                       | Vikas Khand   | 16                                 | 70                          | 37             | 68                      | 0 14               |
| Mathura       |                       | RO. UPPCB, 65 Baldevpuri, Maholi Road                               | 17                                 | 32                          | 26             | 81                      | 0 3                |
|               |                       | CETP, Industrial Area, Mathura                                      | 19                                 | 40                          | 29             | 83                      | 0 4                |
| Meerut        |                       | Begum Bridge  | 70                                 | 85                          | 78             | 59                      | 25 5               |
|               |                       | Thana Railway Road / Kesarganj                                      | 40                                 | 56                          | 48             | 59                      | 0 5                |
| Moradabad     |                       | Hindu College, Station Road   | 11                                 | 83                          | 51             | 91                      | 2 16               |
|               |                       | Central Police Hospital, Civil Lines                                | 13                                 | 59                          | 32             | 90                      | 0 12               |
| Muzaffarnagar |                       | Sahara Parivar Office, Kamal Cinema, Building, Railway Station Road | 14                                 | 46                          | 33             | 97                      | 0 7                |
|               |                       | Lekhpal Bhawan, Tehsil Sadar Campus                                 | 21                                 | 51                          | 35             | 97                      | 0 8                |
| Noida         |                       | UP PPCB, E-12/1, Sector - 1   | 16                                 | 147                         | 61             | 97                      | 20 26              |

Annexure 4: Location wise NO<sub>2</sub> - 2019

| State / UT  | City / town / village | Location   | Concentration in µg/m <sup>3</sup> |                             | No. of days in the year | Standard deviation |    |
|-------------|-----------------------|--|------------------------------------|-----------------------------|-------------------------|--------------------|----|
|             |                       |  | Minimum (24-hourly average)        | Maximum (24-hourly average) |                         |                    |    |
|             |                       | Gee-Pee Electropolating and Eng. Work              | 18                                 | 147                         | 64                      | 24                 | 27 |
|             |                       | Subros, Noida                                      | 10                                 | 80                          | 26                      | 0                  | 14 |
|             |                       | Golf Course, Noida                                 | 10                                 | 82                          | 27                      | 1                  | 15 |
|             | Raebareli             | Town Hall Colony, Ahmad Nagar, Gulab Road          | 13                                 | 16                          | 15                      | 54                 | 1  |
|             |                       | Khoya mandi Tiraha Lucknow Road Raebareli          | 17                                 | 21                          | 19                      | 54                 | 1  |
|             |                       | Amawan Road Ind. Area Raebareli                    | 14                                 | 18                          | 17                      | 54                 | 1  |
|             | Saharanpur            | SRE-A, IIT Roorkee, Saharanpur Campus              | 18                                 | 26                          | 23                      | 92                 | 0  |
|             |                       | UPCL S.E. Office, Near Clock Tower                 | 19                                 | 27                          | 24                      | 91                 | 0  |
|             | Unnao                 | H. No. 5, Krishna Nagar                            | 24                                 | 30                          | 26                      | 74                 | 1  |
|             |                       | IIA Building, Industrial Area, Site 10             | 26                                 | 29                          | 27                      | 74                 | 1  |
|             | Varanasi              | Regional Office, Jawahar Nagar                     | 9                                  | 83                          | 35                      | 98                 | 2  |
|             |                       | Sigra  | 7                                  | 84                          | 34                      | 191                | 17 |
|             |                       | Saket Nagar  | 20                                 | 47                          | 32                      | 93                 | 0  |
|             |                       | Banaras Hindu University                           | 15                                 | 42                          | 30                      | 91                 | 6  |
|             |                       | Chandpur   | 26                                 | 64                          | 41                      | 88                 | 8  |
| Uttarakhand | Dehradun              | Raipur Road, Near parag Diary                      | 26                                 | 30                          | 28                      | 69                 | 1  |
|             |                       | Clock Tower, PWD Guest House                       | 27                                 | 31                          | 29                      | 70                 | 1  |
|             |                       | Himalaya Drug Co. Near ISBT                        | 27                                 | 32                          | 29                      | 68                 | 1  |
|             | Haldwani              | Govt. Women Hospital                               | 21                                 | 46                          | 28                      | 103                | 4  |
|             | Haridwar              | SIDCUL, Haridwar                                   | 20                                 | 27                          | 24                      | 66                 | 3  |
|             | Kashipur              | BSNL Office, Kashipur                              | 22                                 | 31                          | 23                      | 97                 | 1  |
|             | Rishikesh             | Nagar Paliaka Parishad                             | 25                                 | 29                          | 27                      | 78                 | 1  |
|             | Rudrapur              | SIDCUL Office                                      | 21                                 | 30                          | 23                      | 87                 | 1  |
| West Bengal | Alipurduar            | Rabikanta High School                              | 13                                 | 48                          | 33                      | 103                | 0  |
|             |                       | Jaigaon Police Station                             | 15                                 | 50                          | 34                      | 102                | 0  |
|             |                       | Birpara Police Station                             | 13                                 | 48                          | 32                      | 104                | 0  |
|             | Amtala                | P Roy Industrial Training Institute, Amtala        | 26                                 | 53                          | 40                      | 104                | 6  |
|             | Asansol               | Asansol Municipal Corporation                      | 26                                 | 53                          | 43                      | 104                | 0  |
|             |                       | Kangsabati Spinning Mill, Barjora                  | 23                                 | 55                          | 44                      | 104                | 0  |
|             |                       | Burnpur Town Department, Burnpur                   | 27                                 | 53                          | 44                      | 104                | 0  |
|             | Baharampur            | Baharampur Municipality                            | 16                                 | 49                          | 25                      | 104                | 6  |
|             | Balurghat             | Balurghar College                                  | 13                                 | 50                          | 33                      | 104                | 0  |
|             | Bankura               | Bankura Municipality                               | 14                                 | 32                          | 20                      | 104                | 2  |
|             | Barasat               | Barasat Municipality, 73 Rishi Bankim Chandra Road | 11                                 | 50                          | 27                      | 103                | 0  |
|             | Bardhaman             | Bardhaman Town, Rajbati                            | 15                                 | 33                          | 20                      | 104                | 2  |
|             | Barrackpore           | Barrackpore Municipality                           | 15                                 | 44                          | 27                      | 104                | 0  |
|             |                       | Dum Dum Telephone Exchange                         | 17                                 | 53                          | 28                      | 103                | 0  |
|             |                       | Khardah Municipality                               | 16                                 | 51                          | 28                      | 103                | 0  |
|             | Baruipur              | Bauipur Police Station, Baruipur                   | 28                                 | 58                          | 40                      | 104                | 7  |
|             | Bolpur                | Bolpur Municipality                                | 15                                 | 33                          | 20                      | 104                | 2  |
|             | Chinsura              | Chinsura Municipality, Pipulpatti Auto Stand       | 15                                 | 47                          | 26                      | 104                | 6  |
|             | Coochbehar            | ABM Seal College                                   | 13                                 | 49                          | 33                      | 104                | 0  |
|             |                       | Uttarbanga Krishi Visvavidyalaya, Pundibari        | 13                                 | 47                          | 32                      | 104                | 0  |
|             | Dankuni               | Krishnanagar Municipality, Dankuni                 | 13                                 | 44                          | 25                      | 104                | 5  |
|             | Darjeeling            | Bose Institute Campus                              | 13                                 | 45                          | 30                      | 104                | 0  |
|             | Durgapur              | DMC Water Works, Angadpur                          | 24                                 | 53                          | 44                      | 104                | 0  |
|             |                       | Kwality Hotel, Bhiringi More, Benachiti            | 24                                 | 56                          | 43                      | 104                | 0  |
|             |                       | Bidhannagar, PCBL Club, Muchipara                  | 24                                 | 48                          | 32                      | 103                | 0  |
|             |                       | Dew India Limited, PCBL More, Durgapur             | 20                                 | 53                          | 44                      | 104                | 0  |
|             | Ghatal                | Annapurna Hotel, Ghatal-Panskura Bus Stand         | 30                                 | 48                          | 39                      | 107                | 0  |
|             | Haldia                | Debhog Milan Viyapith, Bhabanipur                  | 31                                 | 50                          | 39                      | 107                | 0  |
|             |                       | Bhunia Raichak, Driver's Hut, Bhunia               | 28                                 | 48                          | 38                      | 105                | 0  |
|             |                       | Supermarket Building, Durgachak                    | 30                                 | 49                          | 38                      | 106                | 0  |
|             |                       | WBIIDC Ruchi Soya Ind. Durgachak                   | 30                                 | 47                          | 37                      | 106                | 0  |
|             | Howrah                | Howrah Municipal Corporation                       | 31                                 | 52                          | 42                      | 105                | 0  |
|             |                       | Naskarpa Pump House, Ghuseri                       | 30                                 | 57                          | 39                      | 107                | 0  |
|             |                       | CDS & Health Centre, Bator                         | 32                                 | 49                          | 40                      | 104                | 4  |
|             |                       | Howrah Municipality School, Bandhaghata            | 32                                 | 49                          | 40                      | 104                | 4  |
| Jalpaiguri  | Raninagar Jalpaigur   | 14   | 49                                 | 33                          | 106                     | 0                  |    |
| Jhargram    | Jhargram              | 29   | 48                                 | 37                          | 105                     | 0                  |    |

Annexure 4: Location wise NO<sub>2</sub> - 2019

| State / UT  | City / town / village | Location  | Concentration in $\mu\text{g}/\text{m}^3$ |                             |                | No. of days in the year | Standard deviation |
|-------------|-----------------------|---|---|-----------------------------|----------------|-------------------------|--------------------|
|             |                       |   | Minimum (24-hourly average)               | Maximum (24-hourly average) | Annual Average |                         |                    |
| West Bengal | Kalimpong             | Kalimpong Municipality  | 13  | 47                          | 31             | 104                     | 0 10               |
|             | Kalyani               | College of Medicine & JNM Hospital, Kalyani Industrial Area         | 15  | 49                          | 26             | 104                     | 0 7                |
|             | Kharagpur             | AMD Building, TATA Bearing  | 31  | 52                          | 41             | 106                     | 0 5                |
|             | Kolkata               | Salt Lake, Rooftop of CK Market                                     | 24  | 59                          | 38             | 104                     | 0 7                |
|             |                       | KMC Office Building, Moulali  | 31  | 86                          | 46             | 104                     | 1 11               |
|             |                       | Minto Park, Inside Park AJC Bose Road                               | 23  | 72                          | 40             | 104                     | 0 10               |
|             |                       | Dunlop Bridge, National Sample Survey                               | 27  | 84                          | 47             | 104                     | 1 11               |
|             |                       | Behala Chowrasta, Traffic Guard Building                            | 25  | 77                          | 42             | 104                     | 0 12               |
|             |                       | Upanagari Sporting Club, Baishnabghata                              | 27  | 69                          | 42             | 104                     | 0 10               |
|             |                       | Cossipore Police Station, B.T. Road                                 | 5   | 206                         | 54             | 80                      | 15 41              |
|             |                       | Dalhousie Square, Lal Bazaar Police Headqtr.                        | 5   | 141                         | 51             | 80                      | 12 28              |
|             |                       | Kasba   | 5   | 105                         | 30             | 79                      | 4 25               |
|             |                       | RD CPCB   | 6   | 89                          | 33             | 111                     | 2 24               |
|             |                       | Infectious Diseases & BG Hospital, Beliaghata                       | 25  | 65                          | 40             | 104                     | 0 10               |
|             |                       | CESC Building, Mandeville Gardens, Gariahat                         | 27  | 71                          | 40             | 104                     | 0 9                |
|             |                       | Administrative Building, Hyde Road                                  | 33  | 68                          | 50             | 104                     | 0 8                |
|             |                       | KMC Drainage, Pumping Station, 9 Mominpur Road, Mominpur            | 27  | 60                          | 38             | 104                     | 0 7                |
|             |                       | Paribesh Bhawan   | 26  | 67                          | 40             | 104                     | 0 9                |
|             |                       | Milan Tirtha Club, Picnic Garden                                    | 27  | 65                          | 47             | 104                     | 0 10               |
|             |                       | Public Health Engineering Office Building, Rajarhar                 | 25  | 63                          | 39             | 104                     | 0 8                |
|             |                       | Tennis Club Biulding, 45-46 Canal West Road, Fariapukur, Shyambazar | 29  | 71                          | 43             | 104                     | 0 10               |
|             |                       | Elite India Rubber Products Pvt.Ltd., Topsia                        | 28  | 81                          | 45             | 104                     | 1 12               |
|             |                       | Maniktala Fire Station Building, 17, Bagmari Lane, Ultadanga        | 29  | 78                          | 44             | 104                     | 0 11               |
|             |                       | Tollygunge  | 25  | 56                          | 40             | 104                     | 0 7                |
|             | Krishnanagar          | Krishnanagar Municipality, TN Thakur Road                           | 15  | 44                          | 26             | 104                     | 0 6                |
|             | Madhyamgram           | Madhyamgram Municipality  | 11  | 50                          | 27             | 103                     | 0 6                |
| Jharkhand   | Malda                 | WBCB Office, Paribesh Bhaban, Vill. Abhirampur                      | 14  | 49                          | 34             | 105                     | 0 10               |
|             | Medinipur             | Vidyasagar University   | 30  | 47                          | 38             | 107                     | 0 5                |
|             | Purulia               | Purulia Municipality  | 14  | 32                          | 20             | 104                     | 0 2                |
|             | Raigunj               | Raigunj College   | 13  | 48                          | 32             | 104                     | 0 11               |
|             | Rampurhat             | Rampurhat Municipality  | 15  | 33                          | 20             | 104                     | 0 2                |
|             | Ranaghat              | Ranaghat Municipility, 11 school lane                               | 15  | 57                          | 26             | 104                     | 0 7                |
|             | Raniganj              | Raniganj Municipality   | 24  | 52                          | 44             | 104                     | 0 4                |
|             |                       | Mangalpur, SKS School Mangalpur                                     | 20  | 54                          | 44             | 104                     | 0 5                |
|             |                       | Jamuria Municipality  | 19  | 53                          | 44             | 104                     | 0 5                |
|             | Rishra                | Rishra Municipality   | 11  | 51                          | 27             | 104                     | 0 7                |
|             | Sankrail              | Bharat Co-op Housing Society  | 29  | 50                          | 37             | 104                     | 0 5                |
|             |                       | Bagan Police Station, Bagan   | 30  | 50                          | 38             | 104                     | 0 4                |
|             |                       | Dhulagar Gram Pachayat  | 30  | 49                          | 40             | 106                     | 0 4                |
|             |                       | P Mukherjee's House, Near SBI Amta                                  | 31  | 48                          | 38             | 104                     | 0 4                |
| Sikkim      | Siliguri              | Siliguri  | 17  | 46                          | 33             | 104                     | 0 9                |
|             | Suri                  | Suri Municipality   | 15  | 34                          | 20             | 104                     | 0 2                |
|             | Tamluk                | HP Gas Service Station, Maniktala                                   | 30  | 59                          | 38             | 106                     | 0 5                |
|             | Tribeni               | Tribeni Health Center   | 12  | 43                          | 25             | 104                     | 0 6                |
|             | Uluberia              | ESI hospital nursing building, 3rd floor, Near Sahib Mandir         | 30  | 50                          | 39             | 104                     | 0 4                |

Note: Cities under Ecologically Sensitive Area (5 cities namely Alwar, Agra, Firozabad, Mathura, Dehradun) as notified by Central Government. The rest of the cities are under Industrial / Residential / Rural / others category of the National Ambient Air Quality Standard, 2009

Annual NAAQS of NO<sub>2</sub> is 40  $\mu\text{g}/\text{m}^3$  for Residential/ industrial / other area and 30  $\mu\text{g}/\text{m}^3$  for ecologically sensitive area.

**Levels of Particulate Matter ≤ 10 μm (PM<sub>10</sub>) in locations / Ambient Air Quality Monitoring Stations under NAMP during 2019**

| State          | City      | Location  | Concentration in μg/m <sup>3</sup> |                             |                | No. of days in the year |                 | Standard deviation |
|----------------|-----------|---|------------------------------------|-----------------------------|----------------|-------------------------|-----------------|--------------------|
|                |           |   | Minimum (24-hourly average)        | Maximum (24-hourly average) | Annual Average | Monitored               | Exceeding NAAQS |                    |
| Andhra Pradesh | Anantapur | Kamala Nagar  | 35                                 | 138                         | 85             | 106                     | 37              | 26                 |
|                |           | APIIC Zonl office industrial estate   | 19                                 | 119                         | 62             | 107                     | 8               | 26                 |
|                | Chittoor  | Cancer Unit. G.G.Hsharada Nagar, JNTU Road  | 16                                 | 96                          | 52             | 108                     | 0               | 21                 |
|                |           | D.No.6/5/545, Ram Nagar Colony  | 28                                 | 128                         | 68             | 108                     | 6               | 22                 |
|                | Eluru     | GNC Toll Gate Tirumala  | 17                                 | 117                         | 58             | 100                     | 6               | 24                 |
|                |           | Near Nutrine Confectionery, Palamaner Road  | 26                                 | 95                          | 58             | 108                     | 0               | 11                 |
|                |           | O/O Mines and Geology, Old Collector Office, Greampet                             | 28                                 | 77                          | 53             | 108                     | 0               | 11                 |
|                |           | Sankar Foundry, Industrial Estate, Adjacent of DIC Office                         | 30                                 | 84                          | 55             | 108                     | 0               | 10                 |
|                |           | Rangachari street, Shanthapeta.   | 17                                 | 76                          | 47             | 95                      | 0               | 13                 |
|                | Guntur    | Ashram Diagnostic Centre  | 49                                 | 93                          | 69             | 108                     | 0               | 6                  |
|                |           | District Head quarters hospital   | 48                                 | 73                          | 59             | 108                     | 0               | 5                  |
|                |           | M/s Laxmi Propylene Ltd., Plot.No. 25, Industrial Park, Satrampadu                | 54                                 | 86                          | 64             | 108                     | 0               | 5                  |
|                |           | Somalingeswara nilayam D.N.7B-18-5, Thooru Veedhi, Eastern street, Paidichintaadu | 41                                 | 102                         | 61             | 108                     | 1               | 6                  |
|                | Kadapa    | Near Hindu College, Market Road   | 42                                 | 181                         | 62             | 101                     | 1               | 17                 |
|                |           | A.P. Pollution Control Board, D.No.4-5-4/5C,4/3, Navabharath nagar, Ring Road     | 29                                 | 192                         | 40             | 101                     | 1               | 16                 |
|                |           | Distirct Industries Center office Buiding Autonagar                               | 35                                 | 78                          | 57             | 100                     | 0               | 13                 |
|                |           | Government General hospital   | 35                                 | 162                         | 52             | 101                     | 1               | 15                 |
|                |           | Near ICL Industries, Yerragunta, YSR  | 19                                 | 99                          | 60             | 108                     | 0               | 17                 |
|                | Kakinada  | Devi Diabetes & Hormone Centre, 7 Roads   | 19                                 | 93                          | 52             | 106                     | 0               | 19                 |
|                |           | DIC Office,Kadapa   | 24                                 | 142                         | 55             | 108                     | 1               | 18                 |
|                |           | Rajiv Gandhi Institute of Medical Sciences  | 17                                 | 121                         | 43             | 108                     | 1               | 18                 |
|                |           | Municipal Primary School  | 20                                 | 91                          | 57             | 107                     | 0               | 16                 |
|                |           | Office Building Ramanayyapeta   | 18                                 | 221                         | 63             | 104                     | 16              | 39                 |
|                | Kurnool   | Gram Panchayathi building, Suryaraopeta   | 14                                 | 206                         | 66             | 106                     | 21              | 38                 |
|                |           | MEE Seva / MEPMA Office, Sailipeta  | 18                                 | 186                         | 59             | 105                     | 16              | 39                 |
|                |           | Petro Chemical Engineering Block, JNTU , Pithapuram Road                          | 16                                 | 176                         | 56             | 107                     | 13              | 38                 |
|                |           | Mourya Inn, Krishna Nagar   | 17                                 | 119                         | 59             | 108                     | 6               | 24                 |
|                |           | APIIC Building Industrial estate, Kallur at IDA Bobbili Growth Center             | 22                                 | 113                         | 64             | 108                     | 6               | 24                 |
|                | Nellore   | Rajvihar Circle   | 29                                 | 117                         | 72             | 108                     | 8               | 21                 |
|                |           | Pump House, Venkataramana Colony  | 16                                 | 100                         | 49             | 108                     | 0               | 21                 |
|                |           | Venkatareddy Nagar, Vedayapalem   | 38                                 | 80                          | 68             | 107                     | 0               | 6                  |
|                |           | D. No.15-471, James Garden, Venkata Ramapuram, Nellore, SPSR Nellore District     | 45                                 | 80                          | 68             | 107                     | 0               | 6                  |
|                |           | Chandramouli nagar  | 41                                 | 74                          | 64             | 107                     | 0               | 5                  |
|                | Ongole    | Dr.P.V. Rama chandra Reddy Hospital, Brindavnam                                   | 40                                 | 78                          | 63             | 107                     | 0               | 6                  |
|                |           | Near Court Center   | 38                                 | 74                          | 62             | 107                     | 0               | 6                  |
|                |           | APIIC, Administrative Office, Growth Centre, Gundlapalli                          | 35                                 | 70                          | 57             | 104                     | 0               | 6                  |
|                |           | Ongole Municipal Corporation  | 35                                 | 76                          | 60             | 106                     | 0               | 7                  |
|                |           | Prakasam Milk Product Compay  | 27                                 | 70                          | 58             | 104                     | 0               | 7                  |
|                |           | Staff Clud Building, A.P. Paper Mill  | 17                                 | 186                         | 64             | 99                      | 23              | 43                 |

Annexure 5: Location wise PM<sub>10</sub> - 2019

| State          | City                              | Location  | Concentration in µg/m <sup>3</sup> |                             |                | No. of days in the year |                 | Standard deviation |
|----------------|-----------------------------------|---|------------------------------------|-----------------------------|----------------|-------------------------|-----------------|--------------------|
|                |                                   |   | Minimum (24-hourly average)        | Maximum (24-hourly average) | Annual Average | Monitored               | Exceeding NAAQS |                    |
| Andhra Pradesh | Rajahmundry/<br>Rajamahendravaram | GAIL Administrative Office, A.V. Apparao Road   | 15                                 | 193                         | 61             | 105                     | 19              | 40                 |
|                |                                   | MCH Block ,District Hospital, Near Central Prison, Lalacheruvu Road                       | 17                                 | 221                         | 64             | 106                     | 19              | 42                 |
|                |                                   | APEPDCL, Circle Office Godavari Gattu   | 18                                 | 159                         | 58             | 98                      | 14              | 33                 |
|                | Srikakulam                        | SAMKRG Pistons Quarters Bulding, Near IDA, Pydibhimavaram                                 | 28                                 | 162                         | 72             | 96                      | 10              | 23                 |
|                |                                   | District cooperative office at SKLM Old Bridge  | 25                                 | 137                         | 60             | 106                     | 3               | 17                 |
|                |                                   | APIIC, Kushalapuram   | 26                                 | 205                         | 72             | 96                      | 9               | 29                 |
|                |                                   | Municipal corporation Office, Old Bustand   | 23                                 | 115                         | 63             | 107                     | 2               | 15                 |
| Tamil Nadu     | Tirupati                          | Regional Science Centre, Chittoor Bypass  | 12                                 | 66                          | 43             | 108                     | 0               | 10                 |
|                |                                   | Municipal Office, Tilak Road  | 19                                 | 99                          | 63             | 108                     | 0               | 16                 |
|                |                                   | APPCB-Regional Office, 1st Floor, APSFC Building, NT road                                 | 15                                 | 82                          | 48             | 101                     | 0               | 14                 |
|                |                                   | Sri Venkateswara Guest House (TTD SV Rest House), Near APSRTC Bus Stand                   | 25                                 | 81                          | 59             | 108                     | 0               | 11                 |
|                | Vijaywada                         | NTR Veterinary college of sciences, Gannavaram  | 40                                 | 89                          | 73             | 108                     | 0               | 9                  |
|                |                                   | VR Siddhartha Engineering college , Kanuru  | 32                                 | 86                          | 66             | 108                     | 0               | 9                  |
|                |                                   | APIIC, IALA, IDA, Kondapalli  | 31                                 | 99                          | 75             | 106                     | 0               | 11                 |
|                |                                   | Benz Circle   | 47                                 | 94                          | 78             | 108                     | 0               | 8                  |
|                |                                   | Autonagar   | 50                                 | 97                          | 80             | 108                     | 0               | 8                  |
|                |                                   | Police Control Room   | 48                                 | 99                          | 81             | 90                      | 0               | 9                  |
| Kerala         | Vishakhapatnam                    | A.P. Pollution Control Board, plot no. 41, Sri Kanakadurga Officers colony, Gurunank Road | 42                                 | 97                          | 71             | 108                     | 0               | 9                  |
|                |                                   | Gram Panchayat Office, Yenamalakuduru   | 42                                 | 95                          | 57             | 108                     | 0               | 10                 |
|                |                                   | Indian Medical Association Hall,Eluru Road, Governorpet                                   | 43                                 | 104                         | 73             | 108                     | 1               | 8                  |
|                |                                   | Industrial Estate, Marripalem   | 31                                 | 167                         | 86             | 108                     | 30              | 27                 |
|                |                                   | Panchayat Raj office, Mindi   | 28                                 | 171                         | 71             | 105                     | 17              | 31                 |
|                |                                   | Police Barracks   | 35                                 | 179                         | 86             | 105                     | 32              | 29                 |
|                |                                   | INS-Virabahu, Naval Area  | 26                                 | 198                         | 78             | 95                      | 21              | 31                 |
|                |                                   | Seethammadhara  | 25                                 | 152                         | 64             | 99                      | 4               | 21                 |
|                | Vizianagaram                      | Ganapuram Area  | 34                                 | 270                         | 91             | 107                     | 33              | 32                 |
|                |                                   | Pedagantyada (V), Gajuwada (M)  | 29                                 | 138                         | 73             | 105                     | 14              | 25                 |
|                |                                   | CWMP, RAMKY, Parawada   | 29                                 | 157                         | 69             | 106                     | 23              | 31                 |
|                |                                   | MVP Raitu Bajar   | 27                                 | 119                         | 63             | 102                     | 7               | 23                 |
| Assam          | Arunachal<br>Pradesh              | Industrial Growth Centre, APIIC Building at IDA Bobbili                                   | 33                                 | 103                         | 74             | 101                     | 1               | 12                 |
|                |                                   | APIIC Building, VT Agraharam, Industrial area   | 43                                 | 84                          | 67             | 106                     | 0               | 8                  |
|                |                                   | Municipal Kaspa High School   | 43                                 | 110                         | 63             | 102                     | 1               | 9                  |
|                |                                   | Municipal Office  | 35                                 | 113                         | 64             | 93                      | 1               | 10                 |
|                | Itnagar                           | PCCF's Office Compound  | 10                                 | 228                         | 97             | 48                      | 18              | 55                 |
|                | Naharlagun                        | APSPCB Office compound  | 9                                  | 187                         | 74             | 41                      | 11              | 51                 |
|                | Bongaigaon                        | Oil India Ltd. PS-6, Chirang  | 31                                 | 112                         | 53             | 70                      | 1               | 14                 |
|                |                                   | Barpara Office Building   | 21                                 | 80                          | 35             | 86                      | 0               | 9                  |
|                | Daranga                           | BATAD, Sandoop Jhankar town of Bhutan, Baska  | 17                                 | 134                         | 53             | 94                      | 11              | 30                 |
|                | Dibrugarh                         | Dibrugarh Office Building   | 15                                 | 125                         | 36             | 89                      | 1               | 20                 |
|                | Golaghat                          | Golaghat Office Building  | 17                                 | 85                          | 45             | 80                      | 0               | 18                 |
| Nagaland       | Guwahati                          | Head Office, Bamunimaidam   | 23                                 | 295                         | 122            | 134                     | 70              | 79                 |
|                |                                   | Boragaon, IASST, Kamrup   | 21                                 | 180                         | 79             | 114                     | 34              | 41                 |
|                |                                   | Guwahati University, Kamrup   | 18                                 | 167                         | 74             | 117                     | 36              | 37                 |
|                |                                   | ITI Building, Gopinath Nagar  | 33                                 | 323                         | 142            | 117                     | 64              | 84                 |
|                |                                   | Khanapara, Central Dairy, Kamrup  | 16                                 | 126                         | 48             | 129                     | 4               | 24                 |
|                |                                   | Near Pragjyotish College, Santipur  | 20                                 | 287                         | 115            | 133                     | 63              | 63                 |

Annexure 5: Location wise PM<sub>10</sub> - 2019

| State                                | City                           | Location   | Concentration in µg/m <sup>3</sup> |                             |                | No. of days in the year |                 | Standard deviation |
|--------------------------------------|--------------------------------|--|------------------------------------|-----------------------------|----------------|-------------------------|-----------------|--------------------|
|                                      |                                |  | Minimum (24-hourly average)        | Maximum (24-hourly average) | Annual Average | Monitored               | Exceeding NAAQS |                    |
| Assam                                | Margherita                     | Coal India Office  | 16                                 | 93                          | 48             | 91                      | 0               | 19                 |
|                                      | Nagaon                         | Water Resources Div., Christian Patty, Nagaon College              | 35                                 | 269                         | 105            | 97                      | 42              | 46                 |
|                                      | Nalbari                        | PWD Rural Div Office Complex, near Gordon Boy's GS School          | 37                                 | 184                         | 87             | 77                      | 25              | 33                 |
|                                      | North Lakhimpur                | Bazar Patti, North Lakhimpur Town                                  | 18                                 | 131                         | 56             | 86                      | 12              | 30                 |
|                                      | Silchar                        | Govt. Boys HS School, Janiganj                                     | 39                                 | 58                          | 50             | 74                      | 0               | 4                  |
|                                      |                                | RLO, Ithkola Market, Ghaniwala Road                                | 32                                 | 57                          | 43             | 75                      | 0               | 6                  |
|                                      | Sivasagar                      | Sibasagar Office Building  | 16                                 | 116                         | 49             | 102                     | 1               | 16                 |
|                                      |                                | Usha Lodge, near ONGCL Colony                                      | 20                                 | 115                         | 62             | 103                     | 1               | 15                 |
|                                      | Tezpur                         | Tezpur Office Building   | 24                                 | 189                         | 98             | 86                      | 41              | 41                 |
|                                      | Tinsukia                       | Digboi Carbon factory Campus, Borguri                              | 15                                 | 100                         | 43             | 94                      | 0               | 19                 |
|                                      |                                | Shreepuria, Borguri  | 17                                 | 96                          | 48             | 98                      | 0               | 19                 |
|                                      |                                | Shivdham   | 15                                 | 71                          | 43             | 98                      | 0               | 14                 |
| Bihar                                | Begusarai                      | Begusarai  | 37                                 | 164                         | 117            | 104                     | 77              | 29                 |
|                                      | Darbhanga                      | Smt Baby Kumari, Ashok Hotel,Kadirabad Chowk                       | 35                                 | 267                         | 123            | 105                     | 67              | 59                 |
|                                      | Gaya                           | Godam Road, Raja Market  | 13                                 | 145                         | 71             | 104                     | 21              | 33                 |
|                                      | Muzaffarpur                    | BSPCB Regional Office, Bela Industrial Area, Bela                  | 40                                 | 414                         | 152            | 104                     | 67              | 82                 |
|                                      | Patna                          | Beltron Bhawan, Shastri Nagar                                      | 40                                 | 531                         | 187            | 59                      | 53              | 84                 |
|                                      |                                | Gandhi Maidan, Auto Exhaust Test Centre                            | 37                                 | 746                         | 288            | 75                      | 59              | 181                |
|                                      | Rajgir                         | Sujkund, Near Samuraji hotel                                       | 12                                 | 136                         | 69             | 104                     | 19              | 31                 |
|                                      | Sasaram                        | Takia,Ward no.2, Rhotas  | 12                                 | 116                         | 61             | 105                     | 7               | 28                 |
| Chandigarh                           | Chandigarh                     | Modern Foods, Industrial Area                                      | 26                                 | 444                         | 114            | 149                     | 72              | 63                 |
|                                      |                                | Sector-17 C  | 15                                 | 221                         | 85             | 143                     | 39              | 43                 |
|                                      |                                | Punjab Engineering College, Sector- 12                             | 20                                 | 279                         | 92             | 161                     | 54              | 47                 |
|                                      |                                | Sector-39, IMTECH  | 19                                 | 263                         | 96             | 155                     | 57              | 50                 |
|                                      |                                | Kaimbwala Village  | 19                                 | 267                         | 96             | 140                     | 57              | 51                 |
| Chhattisgarh                         | Bilaspur                       | Regional Office, CECB Vyapar Vihar                                 | 28                                 | 64                          | 47             | 91                      | 0               | 8                  |
|                                      | Durg-Bhillainagar              | Visak Hostel, Sector-4   | 70                                 | 86                          | 78             | 77                      | 0               | 4                  |
|                                      |                                | R.O, 5/32 Banglow Office Building                                  | 49                                 | 66                          | 58             | 82                      | 0               | 4                  |
|                                      |                                | M.P. Laghu Udyog Nigam   | 67                                 | 99                          | 92             | 84                      | 0               | 6                  |
|                                      |                                | CSIDC Industrial Growth Center, Borai, Durg                        | 75                                 | 98                          | 87             | 81                      | 0               | 5                  |
|                                      | Korba                          | HIG 21,22.Near Ghantaghar, MP Extension                            | 35                                 | 76                          | 58             | 97                      | 0               | 12                 |
|                                      |                                | Pragati Nagar NTPC Colony, Jamnipali                               | 33                                 | 95                          | 54             | 103                     | 0               | 13                 |
|                                      |                                | I.T.I., Rampur   | 37                                 | 82                          | 63             | 100                     | 0               | 13                 |
|                                      | Raigarh                        | Regional Office, ECB, Raigarh                                      | 30                                 | 73                          | 55             | 82                      | 0               | 11                 |
|                                      |                                | Jindal Industrial Area,Punjipathra, Raigarh                        | 37                                 | 90                          | 73             | 81                      | 0               | 12                 |
|                                      |                                | OP Jindal School premises Patrapali                                | 26                                 | 78                          | 64             | 65                      | 0               | 11                 |
|                                      | Raipur                         | New HIG-9, Hirapur/Housing Board Complex Kabir Nagar               | 37                                 | 89                          | 63             | 108                     | 0               | 13                 |
|                                      |                                | M/S Wool Worth India Pvt. Ltd. Sarora                              | 49                                 | 98                          | 74             | 77                      | 0               | 14                 |
| Dadra & Nagar Haveli and Daman & Diu | Baldevi (Dadra & Nagar Haveli) | Baldevi Village, Athola, Dadul Faliya, Teh:Dadra & Nagar Haveli    | 22                                 | 87                          | 65             | 97                      | 0               | 14                 |
|                                      | Silvassa                       | Khadoli Industrial Area, Khadoli                                   | 57                                 | 164                         | 108            | 99                      | 53              | 28                 |
|                                      |                                | Chetan Guest House, Near Post Office, Piperia, silvassa Char Rasta | 50                                 | 153                         | 102            | 100                     | 49              | 25                 |
|                                      |                                | Prima Plastic, Kadaiya Industrial Area, Kadaiya                    | 27                                 | 143                         | 99             | 97                      | 47              | 26                 |
|                                      | Daman                          | Mashal Chawk, Nani Daman   | 23                                 | 138                         | 92             | 99                      | 45              | 31                 |
|                                      |                                | Makat Faliya/ Ambavadi, Patlara Village, Moti Daman Teh:Daman      | 27                                 | 91                          | 63             | 100                     | 0               | 16                 |
| Delhi                                | Delhi                          | N.Y. School, Sarojini Nagar, Delhi                                 | 20                                 | 460                         | 154            | 88                      | 50              | 108                |
|                                      |                                | Janakpuri  | 24                                 | 593                         | 211            | 120                     | 99              | 128                |
|                                      |                                | Naraina Industrial Area, Delhi                                     | 38                                 | 565                         | 217            | 88                      | 72              | 115                |
|                                      |                                | Nizamuddin   | 41                                 | 483                         | 178            | 116                     | 88              | 94                 |
|                                      |                                | Pritampura   | 45                                 | 720                         | 206            | 127                     | 100             | 130                |

Annexure 5: Location wise PM<sub>10</sub> - 2019

| State            | City        | Location   | Concentration in µg/m <sup>3</sup> |                             |                | No. of days in the year |                 | Standard deviation |
|------------------|-------------|--|------------------------------------|-----------------------------|----------------|-------------------------|-----------------|--------------------|
|                  |             |  | Minimum (24-hourly average)        | Maximum (24-hourly average) | Annual Average | Monitored               | Exceeding NAAQS |                    |
|                  |             | Shahadra   | 31                                 | 508                         | 188            | 113                     | 89              | 106                |
|                  |             | Shahzada Bagh  | 56                                 | 479                         | 192            | 109                     | 86              | 96                 |
|                  |             | Siri Fort  | 32                                 | 552                         | 185            | 112                     | 82              | 110                |
|                  |             | Town Hall, Ayurvedic Dispensary, Chandni Chowk, Delhi                                | 47                                 | 836                         | 258            | 88                      | 75              | 164                |
| Goa              | Amona       | Amona, Bicholim  | 32                                 | 166                         | 72             | 105                     | 26              | 34                 |
|                  | Assanora    | Assanora Junction, Bardez  | 22                                 | 129                         | 57             | 104                     | 5               | 21                 |
|                  | Bicholim    | Bicholim   | 32                                 | 169                         | 63             | 103                     | 12              | 28                 |
|                  | Codli       | Codli Tisk, Ponda, Sanguem   | 30                                 | 160                         | 60             | 103                     | 7               | 27                 |
|                  | Cuncolim    | Cuncolim   | 32                                 | 182                         | 80             | 102                     | 31              | 40                 |
|                  | Honda       | Honda Junction, Sattari  | 30                                 | 112                         | 63             | 104                     | 3               | 21                 |
|                  | Kundaim     | Kundaim Industrial Estate  | 21                                 | 138                         | 62             | 104                     | 12              | 27                 |
|                  | Mapusa      | Mapusa town  | 14                                 | 268                         | 72             | 90                      | 13              | 40                 |
|                  | Margao      | Margao Town  | 31                                 | 198                         | 59             | 102                     | 9               | 28                 |
|                  | Mormugao    | Fire Brigade Station, Port Trust   | 16                                 | 437                         | 100            | 68                      | 24              | 84                 |
|                  | Panaji      | Old GSPCB premises, Patto  | 14                                 | 518                         | 87             | 78                      | 23              | 66                 |
|                  | Ponda       | Ponda Town   | 31                                 | 203                         | 66             | 105                     | 14              | 32                 |
|                  | Sanguem     | Near Railway Station at Kalem, Sanguem   | 32                                 | 145                         | 57             | 103                     | 6               | 25                 |
|                  | Tilamol     | Quepem, Tilamol  | 29                                 | 139                         | 67             | 102                     | 16              | 27                 |
|                  | Tuem        | Tuem Industrial Estate   | 33                                 | 154                         | 57             | 104                     | 6               | 22                 |
|                  | Usgao       | Usgao Plae, Junction, Ponda  | 32                                 | 152                         | 64             | 96                      | 8               | 23                 |
|                  | Vasco       | Fuse Call Office, Mormugao   | 16                                 | 377                         | 81             | 81                      | 23              | 57                 |
| Gujarat          | Ahmedabad   | Naroda, G.I.D.C., Ahmadabad  | 75                                 | 323                         | 132            | 87                      | 60              | 59                 |
|                  |             | Cadilla Bridge Narol   | 83                                 | 422                         | 150            | 86                      | 63              | 94                 |
|                  |             | Bhagavathi Estate, Keval Kanta Road, Rakhiyal  | 75                                 | 308                         | 132            | 88                      | 62              | 61                 |
|                  |             | Reliable Products, 61/62 Ilaben estate, Pirana Dump Site, Narol (previous Dyno Wash) | 76                                 | 407                         | 158            | 87                      | 75              | 85                 |
|                  |             | L.D. Engg. College   | 66                                 | 339                         | 126            | 88                      | 54              | 60                 |
|                  |             | Shardaben Hospital, Saraspur   | 71                                 | 391                         | 128            | 86                      | 48              | 73                 |
|                  |             | R.C. Technical High School, Mirzapur   | 68                                 | 295                         | 122            | 86                      | 49              | 57                 |
|                  |             | AZL Behrampura, Ahmedabad  | 71                                 | 353                         | 132            | 87                      | 50              | 69                 |
|                  |             | Sola L.T. Chanakyapuri Pumping Station   | 70                                 | 381                         | 138            | 88                      | 58              | 77                 |
|                  |             | Rallis India Ltd.  | 59                                 | 213                         | 119            | 88                      | 52              | 38                 |
|                  | Anklesvar   | Durga Traders, Bhavanafarm Society   | 55                                 | 239                         | 110            | 88                      | 38              | 37                 |
|                  | Jamnagar    | Fisheries Office   | 57                                 | 267                         | 123            | 87                      | 48              | 50                 |
|                  | Rajkot      | Nr. Sardhara Industrial Corporation  | 68                                 | 256                         | 128            | 87                      | 49              | 54                 |
|                  |             | GPCB Regional Office   | 56                                 | 332                         | 125            | 87                      | 46              | 62                 |
|                  |             | S.V.R. Engg. College   | 66                                 | 166                         | 100            | 87                      | 33              | 25                 |
|                  | Surat       | B.R.C. High School, Udhna  | 57                                 | 356                         | 151            | 83                      | 59              | 75                 |
|                  |             | Near Air India Office  | 69                                 | 342                         | 132            | 85                      | 54              | 64                 |
|                  |             | GPCB Office, Geri Vasahat  | 47                                 | 269                         | 107            | 87                      | 30              | 51                 |
|                  | Vadodara    | Sterling Gelatin Guest House, Vill-Karakhadi Padia                                   | 62                                 | 378                         | 145            | 87                      | 53              | 81                 |
|                  |             | Dandia Bazaar  | 71                                 | 293                         | 120            | 88                      | 47              | 49                 |
|                  |             | CETP Nandesari   | 68                                 | 375                         | 151            | 85                      | 0               | 85                 |
|                  |             | Lubrizol   | 65                                 | 333                         | 131            | 87                      | 52              | 63                 |
|                  |             | GEB, IIIrd Phase, GIDC   | 44                                 | 316                         | 131            | 86                      | 49              | 66                 |
|                  | Vapi        | Vapi Nagar Palika, Vapi  | 45                                 | 284                         | 108            | 87                      | 35              | 57                 |
| Himachal Pradesh | Baddi       | Industry Department Office Building  | 57                                 | 292                         | 157            | 125                     | 118             | 41                 |
|                  |             | AHC barotiwala   | 49                                 | 195                         | 125            | 102                     | 81              | 29                 |
|                  |             | Housing Board  | 74                                 | 327                         | 163            | 50                      | 40              | 62                 |
|                  | Damtal      | Regional Office  | 19                                 | 86                          | 47             | 128                     | 0               | 12                 |
|                  |             | Old Road   | 17                                 | 94                          | 50             | 121                     | 0               | 14                 |
|                  | Dharamshala | Kotwali Bazar Dharamshala  | 16                                 | 65                          | 35             | 98                      | 0               | 10                 |
|                  |             | Daari, Dharamshala   | 16                                 | 114                         | 38             | 122                     | 1               | 12                 |
|                  | Gulaba      | Behind green tax barrier   | 8                                  | 62                          |                | 19                      | 0               | 13                 |
|                  | Kala Amb    | Kala Amb Industrial Area   | 23                                 | 233                         | 121            | 171                     | 142             | 41                 |
|                  |             | Kala Amb Town/Trilokpur  | 18                                 | 188                         | 82             | 168                     | 40              | 30                 |
|                  | Manali      | Nehru Park, Manali, Kullu  | 26                                 | 217                         | 79             | 101                     | 23              | 36                 |

Annexure 5: Location wise PM<sub>10</sub> - 2019

| State            | City     | Location   | Concentration in µg/m <sup>3</sup>                               |                             |                | No. of days in the year |                 | Standard deviation |     |
|------------------|----------|--|--|-----------------------------|----------------|-------------------------|-----------------|--------------------|-----|
|                  |          |  | Minimum (24-hourly average)                                      | Maximum (24-hourly average) | Annual Average | Monitored               | Exceeding NAAQS |                    |     |
| Himachal Pradesh |          | HPSPCB, Hadimba Road, Manali, Kullu                              | 19   | 113                         | 49             | 83                      | 1               | 19                 |     |
|                  |          | Marhi  | Behind Police check post   | 18                          | 60             | 35                      | 12              | 0                  | 13  |
|                  |          | Nalagarh   | Municipal Council  | 68                          | 251            | 125                     | 120             | 86                 | 37  |
|                  |          | Paonta Sahib   | Paonta Sahib   | 26                          | 188            | 79                      | 165             | 30                 | 28  |
|                  |          |  | Gondhpur Industrial Area   | 17                          | 188            | 88                      | 119             | 39                 | 30  |
|                  |          | Parwanoo   | Regional Office, Sector- 4                                       | 29                          | 191            | 61                      | 141             | 1                  | 17  |
|                  |          |  | Asst. Commissioner Building Sector I                             | 32                          | 192            | 67                      | 128             | 1                  | 17  |
|                  |          | Shimla   | Bus Stand, Winterfield   | 19                          | 137            | 59                      | 213             | 5                  | 19  |
|                  |          | Sunder Nagar   | HPSPCB, BBMB Colony, Mandi                                       | 5                           | 193            | 69                      | 144             | 14                 | 29  |
|                  |          |  | Municipal Council, NH-21, Mandi                                  | 22                          | 170            | 76                      | 107             | 16                 | 25  |
|                  |          | Una  | Regional Office, Una   | 30                          | 79             | 60                      | 164             | 0                  | 5   |
|                  |          |  | DIC Building, Mehatpur, Una                                      | 51                          | 71             | 62                      | 97              | 0                  | 4   |
|                  | Vashisht | Behind pollution check barrier, Bahang / Station No.-II1, Bahang | 26   | 96                          | 48             | 44                      | 0               | 15                 |     |
| Jammu & Kashmir  |          | Jammu  | Regional Office, Jammu   | 94                          | 178            | 140                     | 91              | 89                 | 19  |
|                  |          |  | M.A. Stadium, Jewel Chowk  | 89                          | 175            | 136                     | 82              | 77                 | 18  |
|                  |          | Pulwama  | Bari Brahamana Industrial Area                                   | 70                          | 186            | 139                     | 99              | 96                 | 20  |
|                  |          | Srinagar   | Khrew  | 43                          | 269            | 120                     | 58              | 32                 | 56  |
|                  |          |  | SPCB Office Campus, Srinagar                                     | 42                          | 237            | 76                      | 50              | 6                  | 36  |
|                  |          |  | Khonmoh  | 52                          | 858            | 136                     | 55              | 36                 | 110 |
|                  |          | Srinagar   | Lasjan, Budgam   | 90                          | 362            | 185                     | 55              | 53                 | 55  |
| Jharkhand        |          | Barajamda  | Barajamda U.M. Office  | 50                          | 98             | 76                      | 91              | 0                  | 9   |
|                  |          | Dhanbad  | R.O. Dhanbad   | 73                          | 286            | 162                     | 103             | 83                 | 50  |
|                  |          |  | EMTI, Bastacola  | 171                         | 397            | 275                     | 75              | 75                 | 60  |
|                  |          |  | CGM Office, Kusunda  | 77                          | 437            | 273                     | 100             | 97                 | 75  |
|                  |          | Jamshedpur   | Bistupur Vehical Testing Centre                                  | 61                          | 197            | 139                     | 93              | 82                 | 26  |
|                  |          |  | Golmuri Vehicle Testing Centre                                   | 81                          | 171            | 138                     | 91              | 82                 | 25  |
|                  |          | Jharia   | M.A.D.A.   | 109                         | 427            | 302                     | 105             | 105                | 71  |
|                  |          | Ranchi   | Albert Ekka Chowk, Main Road                                     | 73                          | 168            | 109                     | 96              | 94                 | 9   |
|                  |          | Saraikela  | RO Building, Adityapur   | 66                          | 236            | 135                     | 91              | 80                 | 28  |
|                  |          | Sindri   | BIT / PDIL   | 24                          | 204            | 137                     | 75              | 52                 | 50  |
| Karnataka        |          | Bagalkote  | Bagalkote KSPCB Office Premises                                  | 16                          | 117            | 45                      | 85              | 2                  | 19  |
|                  |          | Bangalore  | Graphite India, White Field Road                                 | 56                          | 186            | 91                      | 83              | 58                 | 25  |
|                  |          |  | AMCO Batteries, Mysore Road                                      | 52                          | 152            | 89                      | 107             | 19                 | 21  |
|                  |          |  | KHB Industrial Area, Yelahanka                                   | 42                          | 184            | 80                      | 80              | 11                 | 28  |
|                  |          |  | Peenya Industrial Area   | 53                          | 183            | 104                     | 52              | 23                 | 32  |
|                  |          |  | Victoria hospital  | 24                          | 131            | 56                      | 103             | 2                  | 16  |
|                  |          |  | Yeshwanthpura police station                                     | 41                          | 165            | 79                      | 100             | 17                 | 23  |
|                  |          |  | Jnanabharathi, Bangalore University                              | 11                          | 84             | 43                      | 68              | 0                  | 12  |
|                  |          |  | RV College of Engineering, Mysore Road                           | 34                          | 34             |                         | 1               | 0                  |     |
|                  |          |  | TERI office, Vital Medi healthcare Pvt Ltd                       | 44                          | 146            | 87                      | 108             | 27                 | 23  |
|                  |          | Belgaum  | Karnataka SPCB Office Building                                   | 18                          | 169            | 87                      | 52              | 20                 | 40  |
|                  |          | Bidar  | KSPCB Office Premises  | 14                          | 155            | 71                      | 60              | 13                 | 36  |
|                  |          | Bijapur  | KSPCB Office Premises  | 32                          | 208            | 93                      | 38              | 13                 | 38  |
|                  |          | Chitradurga  | KSPCB Office Premises  | 18                          | 98             | 52                      | 105             | 0                  | 22  |
|                  |          | Devanagere   | Regional Office building, KSPCB                                  | 19                          | 100            | 52                      | 94              | 1                  | 22  |
|                  |          |  | Mothi Theatre, Gandhi Circle, P.B. Road / Traffic Police Station | 38                          | 212            | 115                     | 80              | 54                 | 34  |
|                  |          |  | HPF Intakewell, Kumarapattnam                                    | 17                          | 81             | 42                      | 102             | 0                  | 14  |
|                  |          | Gulburga   | Government Hospital  | 32                          | 240            | 87                      | 58              | 19                 | 45  |
|                  |          | Hassan   | KSRTC bus stand building   | 27                          | 49             | 37                      | 104             | 0                  | 5   |
|                  |          | Hubli-Dharwad  | Lakkamanahalli Industrial Area, Dharwad                          | 47                          | 81             | 62                      | 105             | 0                  | 8   |
|                  |          |  | Rani Chennamma Circle, Hubli                                     | 58                          | 91             | 76                      | 104             | 0                  | 8   |
|                  |          | Kolar  | KSPCB Office Premises, Kolar                                     | 60                          | 152            | 109                     | 98              | 58                 | 22  |
|                  |          | Mandy  | KSPCB Building, Bandigowda Badarahe                              | 34                          | 81             | 43                      | 106             | 0                  | 7   |
|                  |          | Mangalore  | Baikampady Industrial Area                                       | 23                          | 80             | 47                      | 92              | 0                  | 9   |
|                  |          | Mysore   | K.R.Circle, Visvesvaraya Bldg                                    | 30                          | 70             | 52                      | 110             | 0                  | 6   |
|                  |          |  | KSPCB Bldg. Hebbal Ind. Area                                     |                             |                |                         |                 |                    |     |
|                  |          | Raichur  | KSPCB Office Premises, Raichur                                   | 17                          | 186            | 74                      | 77              | 16                 | 38  |
|                  |          | Shimoga  | The VISL, Oxygen Plant, Shimoga                                  | 11                          | 79             | 33                      | 100             | 0                  | 13  |

Annexure 5: Location wise PM<sub>10</sub> - 2019

| State          | City               | Location   | Concentration in µg/m <sup>3</sup> |                             |                | No. of days in the year |                 | Standard deviation |
|----------------|--------------------|--|------------------------------------|-----------------------------|----------------|-------------------------|-----------------|--------------------|
|                |                    |  | Minimum (24-hourly average)        | Maximum (24-hourly average) | Annual Average | Monitored               | Exceeding NAAQS |                    |
| Kerala         | Timukuru           | KSPCB Office Premises  | 41                                 | 145                         | 75             | 103                     | 7               | 20                 |
|                | Alappuzha          | District Office, Alissery Road                                       | 23                                 | 84                          | 49             | 107                     | 0               | 12                 |
|                |                    | DC Mills, Pathirappally  | 37                                 | 84                          | 67             | 25                      | 0               | 9                  |
|                |                    | William Goodacre Power House Bridge                                  | 40                                 | 83                          | 52             | 71                      | 0               | 10                 |
|                | Kochi              | Eloor I, FACT, Ambalamughal  | 27                                 | 144                         | 49             | 107                     | 4               | 23                 |
|                |                    | Eloor II   | 32                                 | 127                         | 50             | 102                     | 2               | 18                 |
|                |                    | Irumpanam  | 12                                 | 118                         | 42             | 104                     | 1               | 22                 |
|                |                    | Ernakulum South  | 20                                 | 91                          | 51             | 64                      | 0               | 18                 |
|                |                    | VYTILA   | 11                                 | 181                         | 42             | 104                     | 1               | 25                 |
|                |                    | MG Road Bank Ernakulum   | 15                                 | 90                          | 40             | 104                     | 0               | 17                 |
|                |                    | KALAMASSERY / CSIR Complex   | 16                                 | 120                         | 50             | 102                     | 2               | 20                 |
|                |                    | Kuttipadam   | 19                                 | 64                          | 42             | 42                      | 0               | 12                 |
|                |                    | KSPCB, District Office, Kadappakada                                  | 32                                 | 50                          | 45             | 110                     | 0               | 3                  |
|                | Kollam             | KMML Chavara   | 40                                 | 55                          | 46             | 110                     | 0               | 2                  |
|                |                    | Kottayam   | 27                                 | 52                          | 41             | 119                     | 0               | 6                  |
|                | Kottayam           | Vadavathoor  | 21                                 | 38                          | 30             | 119                     | 0               | 4                  |
|                |                    | Kozhikode City   | 14                                 | 119                         | 44             | 103                     | 8               | 22                 |
|                | Kozhikode          | Nallalam   | 12                                 | 110                         | 44             | 67                      | 2               | 25                 |
|                | Malapuram          | Kakkanchery, Sijmak oils   | 21                                 | 70                          | 35             | 107                     | 0               | 10                 |
|                | Palakkad           | SEPR Refractories India Ltd.   | 11                                 | 144                         | 51             | 98                      | 4               | 26                 |
|                | Pathanamthitta     | KSPCB, Makkamkunnu   | 31                                 | 37                          | 34             | 100                     | 0               | 1                  |
|                | Thiruvananthapuram | PRS Hospital/COSMO   | 22                                 | 65                          | 41             | 105                     | 0               | 9                  |
|                |                    | SMV School   | 29                                 | 68                          | 43             | 105                     | 0               | 8                  |
|                |                    | VELI / HiTech Chackai  | 23                                 | 68                          | 43             | 105                     | 0               | 10                 |
|                |                    | PETTAH / Sasthamangalam(plamadou)                                    | 26                                 | 82                          | 43             | 105                     | 0               | 10                 |
|                | Thissur            | KSPCB, District Office, Poonkunnam                                   | 27                                 | 70                          | 39             | 104                     | 0               | 7                  |
|                |                    | Thissur/ Peringandoor  | 22                                 | 55                          | 38             | 74                      | 0               | 6                  |
|                | Wayanad            | Sulthan Bathery  | 14                                 | 41                          | 28             | 104                     | 0               | 8                  |
|                |                    | Wayanad  | 15                                 | 37                          | 26             | 79                      | 0               | 7                  |
| Madhya Pradesh | Amlai              | HJI  | 65                                 | 118                         | 92             | 60                      | 25              | 16                 |
|                |                    | OPM  | 54                                 | 101                         | 78             | 69                      | 2               | 13                 |
|                | Bhopal             | Hamidia Road, MP Hastshilp Vikas Nigam                               | 90                                 | 320                         | 181            | 72                      | 70              | 46                 |
|                |                    | CETP Govindpura  | 88                                 | 244                         | 152            | 87                      | 84              | 34                 |
|                |                    | Nutan Subhash School, T.T. Nagar                                     | 71                                 | 172                         | 122            | 36                      | 31              | 20                 |
|                |                    | Kolar Thana, Kolar Road, Bhopal                                      | 89                                 | 337                         | 195            | 70                      | 69              | 55                 |
|                |                    | AKVN Office, Industrial Area   |                                    |                             |                |                         |                 |                    |
|                |                    | Mandideep, Raisen  | 140                                | 420                         | 230            | 71                      | 71              | 64                 |
|                |                    | Barkatullah University, Hoshgabad Road, Bhopal                       | 82                                 | 244                         | 138            | 73                      | 67              | 32                 |
|                |                    | Main Road, Hemu Colony, Bairagarh, Bhopal                            | 53                                 | 241                         | 149            | 77                      | 71              | 34                 |
|                |                    | Arera Colony   | 55                                 | 189                         | 119            | 83                      | 62              | 27                 |
|                | Chhindwara         | HIG -33, Front of Geetanali Park Housing Board Colony, Chadagaon     | 29                                 | 121                         | 73             | 96                      | 2               | 17                 |
|                |                    | Hindustan Unileaver, Narsinghpur Road,                               | 36                                 | 138                         | 83             | 88                      | 8               | 18                 |
|                | Dewas              | EID Perry (I) Limited  | 51                                 | 98                          | 80             | 94                      | 0               | 11                 |
|                |                    | Dewas Metal Section  | 57                                 | 97                          | 79             | 93                      | 0               | 12                 |
|                |                    | Vikas Nagar  | 45                                 | 96                          | 78             | 96                      | 0               | 12                 |
|                | Gwalior            | Dindayal Nagar   | 41                                 | 382                         | 135            | 90                      | 74              | 46                 |
|                |                    | Maharaj Bada   | 46                                 | 215                         | 143            | 93                      | 78              | 41                 |
|                | Indore             | M.P. Laghu Udyog, Pologround   | 28                                 | 130                         | 81             | 94                      | 12              | 23                 |
|                |                    | Kothari Market, M.G. Road  | 25                                 | 132                         | 77             | 101                     | 13              | 24                 |
|                |                    | Telephone Nagar, 26 A, Kanadia Road                                  | 22                                 | 120                         | 73             | 99                      | 3               | 20                 |
|                | Jabalpur           | Vijay Nagar  | 49                                 | 128                         | 74             | 101                     | 2               | 11                 |
|                |                    | Udaipur Beverage Racchai   | 85                                 | 101                         | 94             | 101                     | 4               | 4                  |
|                | Katni              | HIG-4 Housing Board Colony Jhinjhri, Katni                           | 80                                 | 172                         | 99             | 96                      | 37              | 12                 |
|                |                    | Calderys Works Refactories India Private Limited, Guest House, Katni | 83                                 | 115                         | 97             | 72                      | 22              | 7                  |
|                | Nagda              | Chem. D. Labour Club   | 30                                 | 59                          | 45             | 75                      | 0               | 6                  |
|                |                    | B C I Labour Club  | 35                                 | 61                          | 47             | 80                      | 0               | 6                  |

Annexure 5: Location wise PM<sub>10</sub> - 2019

| State | City       | Location   | Concentration in µg/m <sup>3</sup> |                             |                | No. of days in the year |                 | Standard deviation |
|-------|------------|--|------------------------------------|-----------------------------|----------------|-------------------------|-----------------|--------------------|
|       |            |  | Minimum (24-hourly average)        | Maximum (24-hourly average) | Annual Average | Monitored               | Exceeding NAAQS |                    |
|       | Prithampur | Grasim Kalyan Kendra                                 | 42                                 | 93                          | 66             | 75                      | 0               | 13                 |
|       |            | Vikas Bhavan, Sector-2                               | 53                                 | 108                         | 85             | 94                      | 4               | 13                 |
|       |            | RCC Over Head Tank No. 1, Sector-3                   | 46                                 | 115                         | 86             | 112                     | 11              | 14                 |
|       | Sagar      | Pt.Deendayal Nagar                                   | 19                                 | 123                         | 75             | 96                      | 3               | 20                 |
|       |            | Katra Bazar, Sagar                                   | 20                                 | 120                         | 69             | 102                     | 1               | 16                 |
|       | Satna      | Sub-divisional Office E/M Light Machnery             | 73                                 | 185                         | 137            | 77                      | 76              | 20                 |
|       |            | MPPCB,Dharwari GaliNo.5,House No.318                 | 8                                  | 133                         | 110            | 73                      | 61              | 18                 |
|       | Singrauli  | Jayant Township                                      | 30                                 | 360                         | 189            | 83                      | 71              | 82                 |
|       |            | N.T.P.C., Vidyanganar                                | 37                                 | 485                         | 197            | 80                      | 67              | 83                 |
|       |            | Waidhan  | 32                                 | 492                         | 189            | 87                      | 66              | 92                 |
|       | Ujjain     | District Office                                      | 60                                 | 115                         | 95             | 67                      | 60              | 12                 |
|       |            | Regional Office                                      | 37                                 | 107                         | 64             | 73                      | 1               | 11                 |
|       |            | Mahakal Temple                                       | 38                                 | 109                         | 74             | 51                      | 3               | 17                 |
|       |            | Chamunda Mata Chouraha                               | 56                                 | 107                         | 80             | 49                      | 5               | 13                 |
|       | Akola      | LRT Commerce College, Civil Lines, Akola             | 60                                 | 74                          | 66             | 88                      | 0               | 3                  |
|       |            | MIDC Water Work, Phash-II, MIDC Akola                | 60                                 | 81                          | 71             | 143                     | 0               | 5                  |
|       |            | College Of Engineering & Tech, Akola                 | 60                                 | 81                          | 69             | 196                     | 0               | 5                  |
|       | Ambernath  | Ambernath Municipal Council Office                   | 26                                 | 330                         | 118            | 131                     | 69              | 62                 |
|       | Amravati   | Apurva Oil Industries, A-23, MIDC                    | 54                                 | 134                         | 96             | 215                     | 86              | 21                 |
|       |            | Elect. Dept., Govt College Engineering               | 56                                 | 102                         | 77             | 92                      | 1               | 11                 |
|       |            | Rajkamal Square, Vaneeta Samaj                       | 56                                 | 136                         | 96             | 154                     | 58              | 23                 |
|       | Aurangabad | S.B.E.S. College                                     | 43                                 | 96                          | 74             | 140                     | 0               | 11                 |
|       |            | Collector Ofice                                      | 43                                 | 104                         | 70             | 123                     | 1               | 11                 |
|       |            | C.A.D.A. Ofice, Garkheda                             | 49                                 | 97                          | 77             | 87                      | 0               | 11                 |
|       | Badlapur   | BIWA Office  | 17                                 | 319                         | 108            | 187                     | 81              | 55                 |
|       | Bhiwandi   | Prematai Hall, Near Dhamankar Naka                   | 63                                 | 82                          | 68             | 101                     | 0               | 4                  |
|       |            | Fire Brigade Office, I.G.M. Hospital                 | 63                                 | 85                          | 70             | 165                     | 0               | 6                  |
|       |            | Regional Office, M.P.C. Board, Kalyan                | 21                                 | 85                          | 68             | 237                     | 0               | 10                 |
|       | Chandrapur | Grampanchat Ghughus                                  | 85                                 | 357                         | 223            | 94                      | 89              | 75                 |
|       |            | M.I.D.C. Chandrapur                                  | 44                                 | 148                         | 90             | 101                     | 33              | 21                 |
|       |            | Nagar Parishad                                       | 23                                 | 193                         | 85             | 163                     | 45              | 34                 |
|       |            | Gadchandur Gram Panchayat, Rajura                    | 76                                 | 278                         | 170            | 97                      | 94              | 44                 |
|       |            | MIDC, Tadali   | 54                                 | 220                         | 110            | 97                      | 68              | 25                 |
|       |            | Municipal Council, Ballarshah                        | 61                                 | 205                         | 119            | 99                      | 69              | 32                 |
|       | Dombivali  | Dombivali MIDC Phase-II                              | 17                                 | 295                         | 106            | 190                     | 89              | 48                 |
|       | Jalgaon    | B. J. Market   | 49                                 | 90                          | 60             | 87                      | 0               | 6                  |
|       |            | Girna water tank                                     | 47                                 | 89                          | 59             | 193                     | 0               | 6                  |
|       |            | MIDC Jalgaon   | 46                                 | 93                          | 61             | 140                     | 0               | 7                  |
|       | Jalna      | Bachat Bhawan, Near S P Office                       | 83                                 | 120                         | 98             | 104                     | 34              | 7                  |
|       |            | Krishidhan Seeds Ltd, MIDC Area                      | 75                                 | 120                         | 96             | 172                     | 30              | 6                  |
|       | Kolhapur   | University Campus, Shivaji University                | 36                                 | 82                          | 62             | 81                      | 0               | 11                 |
|       |            | Ruikar Trust, S.T. Stand                             | 41                                 | 158                         | 98             | 147                     | 75              | 35                 |
|       |            | Mahadwar Road, Near Mahalaxmi Temple                 | 41                                 | 158                         | 96             | 203                     | 92              | 29                 |
|       | Latur      | MIDC Water Works                                     | 54                                 | 152                         | 84             | 239                     | 35              | 19                 |
|       |            | Kshewraj Vidyalaya Shyam nagar                       | 57                                 | 148                         | 88             | 104                     | 21              | 18                 |
|       |            | Sidhheshwar Sahakari Bank Ganjgolai                  | 55                                 | 147                         | 85             | 172                     | 30              | 18                 |
|       | Mumbai     | Bank of India, Kalbadevi /Branch, Kalbadevi/ VARSOVA | 33                                 | 262                         | 118            | 84                      | 45              | 57                 |
|       |            | Parel TT, Ambedkar Road                              | 21                                 | 591                         | 136            | 88                      | 57              | 86                 |
|       |            | Worli  | 43                                 | 441                         | 122            | 87                      | 51              | 63                 |
|       | Nagpur     | Institution of Engineers                             | 53                                 | 183                         | 103            | 100                     | 44              | 27                 |
|       |            | Govt. Polytechnic College, Sadar                     | 54                                 | 214                         | 103            | 96                      | 39              | 26                 |

Annexure 5: Location wise PM<sub>10</sub> - 2019

| State       | City             | Location  | Concentration in µg/m <sup>3</sup> |                             |                | No. of days in the year |                 | Standard deviation |
|-------------|------------------|---|------------------------------------|-----------------------------|----------------|-------------------------|-----------------|--------------------|
|             |                  |   | Minimum (24-hourly average)        | Maximum (24-hourly average) | Annual Average | Monitored               | Exceeding NAAQS |                    |
| Maharashtra | Nashik           | NEERI Lab, Nehru Marg, Highway No. 7                          | 3                                  | 898                         | 131            | 74                      | 44              | 114                |
|             |                  | MPCB Office Premises, Civil Lines                             | 46                                 | 149                         | 73             | 321                     | 31              | 19                 |
|             |                  | R.T.O. Colony Tank  | 23                                 | 169                         | 65             | 154                     | 22              | 31                 |
|             |                  | VIP Industrial Area, MIDC Satpura                             | 23                                 | 162                         | 66             | 104                     | 17              | 28                 |
|             |                  | Nashik Municipal Council Building                             | 23                                 | 162                         | 61             | 218                     | 27              | 27                 |
|             | Navi Mumbai      | MPCB Sub R.O. Udyog Bhawan, Nashik                            | 24                                 | 312                         | 61             | 305                     | 30              | 29                 |
|             |                  | T.B.I.A, Rabale Airoli, TTC                                   | 34                                 | 69                          | 55             | 103                     | 0               | 7                  |
|             |                  | Dr. D.Y. Patil College, Nerul, TTC                            | 31                                 | 83                          | 53             | 229                     | 0               | 8                  |
|             |                  | MPCB Lab, Mhape, TTC  | 31                                 | 79                          | 54             | 168                     | 0               | 7                  |
|             |                  | CIDCO Nodal Office Kharghar                                   | 31                                 | 74                          | 53             | 103                     | 0               | 7                  |
|             | Pimpri-Chinchwad | Water Pump House, Panvel, Taloja                              | 31                                 | 74                          | 53             | 168                     | 0               | 7                  |
|             |                  | MIDC Collom Facility Building, Taloja                         | 31                                 | 74                          | 55             | 229                     | 0               | 7                  |
|             | Pune             | Bank of Baroda Builing, Near M.C Building                     | 13                                 | 219                         | 76             | 199                     | 49              | 42                 |
|             |                  | Maratha Chamber of commerce, Bhosari                          | 14                                 | 331                         | 123            | 62                      | 34              | 72                 |
|             |                  | State Electricity Board BLDG Nalstop                          | 14                                 | 331                         | 125            | 113                     | 76              | 65                 |
|             | Sangli           | Swargate Police Chawki  | 82                                 | 331                         | 181            | 33                      | 31              | 60                 |
|             |                  | Udyog bhavan / SRO, MPCB Sangli                               | 14                                 | 148                         | 61             | 99                      | 14              | 34                 |
|             |                  | Sangli- Miraj Primary school Building                         | 14                                 | 203                         | 69             | 226                     | 61              | 47                 |
|             | Solapur          | Krishna Valley School   | 14                                 | 179                         | 70             | 163                     | 46              | 43                 |
|             |                  | WIT Campus  | 54                                 | 88                          | 73             | 102                     | 0               | 7                  |
|             | Thane            | Voronoko School / Chitale Clinic                              | 54                                 | 89                          | 75             | 144                     | 0               | 8                  |
|             |                  | Maternity Hospital, Dhobighat, Thane East                     | 62                                 | 232                         | 124            | 24                      | 10              | 60                 |
|             |                  | Shahu Market,Naupada, Thane West                              | 58                                 | 232                         | 135            | 49                      | 30              | 52                 |
|             | Ulhasnagar       | Kolshet and Balkum, Thane West                                | 47                                 | 232                         | 127            | 72                      | 41              | 51                 |
|             |                  | Smt. C. H. M. College Campus                                  | 17                                 | 187                         | 76             | 99                      | 15              | 35                 |
| Manipur     | Imphal           | Octroi Naka, Pawai-Chowk, Vithalwadi                          | 34                                 | 319                         | 113            | 107                     | 50              | 52                 |
|             | Bynihat          | Secretariat Building  | 38                                 | 180                         | 109            | 58                      | 36              | 35                 |
| Meghalaya   | Dawki            | EPIP, Ri-Bhoi district  | 17                                 | 199                         | 103            | 121                     | 80              | 54                 |
|             | Khliehriat       | Terrace building, Jaintia Hills District                      | 16                                 | 167                         | 53             | 121                     | 27              | 47                 |
|             | Nongstoin        | O/o BDO, C & R.D. Block-Khliehriat                            | 17                                 | 55                          | 43             | 122                     | 0               | 9                  |
|             | Shillong         | Office Premises of E.E, PHED                                  | 8                                  | 36                          | 30             | 121                     | 0               | 6                  |
|             |                  | Boards Office Permisess, Lumpyngngad                          | 16                                 | 43                          | 30             | 106                     | 0               | 5                  |
|             |                  | State Tuberculosis Hospital                                   | 17                                 | 69                          | 50             | 121                     | 0               | 13                 |
|             |                  | Forest Rest House, Polo Hills                                 | 17                                 | 42                          | 34             | 117                     | 0               | 6                  |
|             | Tura             | 41/2 mile, Mylliem Range Office                               | 12                                 | 58                          | 31             | 118                     | 0               | 9                  |
|             | Umiam / Umsning  | PHED, Araisimille, West Garo Hills District                   | 14                                 | 40                          | 31             | 116                     | 0               | 6                  |
|             |                  | Umiam Industrial Complex, Ri-Bhoi District                    | 17                                 | 136                         | 94             | 120                     | 66              | 27                 |
| Mizoram     | Aizawl           | Khatla, M.G-Road, Mizoram SPCB                                | 10                                 | 211                         | 84             | 103                     | 39              | 40                 |
|             |                  | Laipuitlang   | 11                                 | 31                          | 20             | 106                     | 0               | 4                  |
|             |                  | Bawngkawn   | 10                                 | 99                          | 46             | 102                     | 0               | 14                 |
|             |                  | Dawrpui Y.M.A, Building, Dawrpui                              | 35                                 | 95                          | 56             | 102                     | 0               | 10                 |
|             |                  | Lengpui Airport, Model Veng, Lengpui                          | 14                                 | 89                          | 34             | 94                      | 0               | 17                 |
|             | Champhai         | D.T.O Office Building, Kahrawt veng                           | 13                                 | 31                          | 21             | 101                     | 0               | 4                  |
|             |                  | Lalzidinga building, Vengthlang                               | 22                                 | 37                          | 29             | 101                     | 0               | 4                  |
|             | Kolasib          | H. Lalhuama Building, Project Veng                            | 3                                  | 35                          | 16             | 101                     | 0               | 8                  |
|             |                  | Synod Bookroom, Building Diakkawn                             | 15                                 | 141                         | 30             | 101                     | 1               | 13                 |
|             |                  | Thangkhuma Building, Salem Veng                               | 3                                  | 9                           | 7              | 96                      | 0               | 1                  |
|             | Lunglei          | K.Lalliantluanga, Chanmari I, Lunglei                         | 7                                  | 21                          | 10             | 96                      | 0               | 2                  |
| Nagaland    | Dimapur          | Bank Colony   | 19                                 | 232                         | 97             | 139                     | 51              | 42                 |
|             |                  | Dhobinala   | 46                                 | 247                         | 125            | 121                     | 88              | 40                 |
|             |                  | Signal point, Dimapur, Nagaland SPCB                          | 15                                 | 104                         | 49             | 103                     | 2               | 20                 |
|             |                  | House no-288, Tenyiphe-I, Chumukiedima, Dimapur               | 20                                 | 188                         | 75             | 103                     | 18              | 35                 |
|             |                  | Vidya Bhawan School, Lane 17, Nagarjan, Kuda Village, Dimapur | 15                                 | 102                         | 61             | 48                      | 1               | 20                 |
|             |                  | House no 24, Near community Hall, Viola colony, Dimapur       | 20                                 | 92                          | 53             | 48                      | 0               | 19                 |
|             |                  | ERJO Motors, Burma Camp, Dimapur                              | 27                                 | 128                         | 80             | 48                      | 14              | 28                 |

Annexure 5: Location wise PM<sub>10</sub> - 2019

| State      | City                | Location  | Concentration in µg/m <sup>3</sup> |                             |                | No. of days in the year |                 | Standard deviation |
|------------|---------------------|---|------------------------------------|-----------------------------|----------------|-------------------------|-----------------|--------------------|
|            |                     |   | Minimum (24-hourly average)        | Maximum (24-hourly average) | Annual Average | Monitored               | Exceeding NAAQS |                    |
|            | Kohima              | Opposite NST Office   | 21                                 | 163                         | 77             | 138                     | 40              | 38                 |
|            |                     | Opposite War Cemetery   | 25                                 | 299                         | 112            | 121                     | 54              | 64                 |
| Odisha     | Angul               | Industrial Estate   | 48                                 | 189                         | 107            | 102                     | 62              | 24                 |
|            |                     | NALCO Township  | 34                                 | 223                         | 92             | 102                     | 36              | 25                 |
|            | Balasore            | Sahadevkhunta   | 69                                 | 103                         | 85             | 104                     | 1               | 7                  |
|            |                     | DIC office  | 69                                 | 113                         | 84             | 104                     | 1               | 7                  |
|            |                     | Rasalpur near Balgopalpur I/A                                     | 26                                 | 115                         | 89             | 105                     | 2               | 9                  |
|            |                     | Berhampur   | 33                                 | 151                         | 65             | 107                     | 8               | 23                 |
|            | Bhubneshwar         | Capital Police Station  | 67                                 | 206                         | 108            | 98                      | 54              | 28                 |
|            |                     | IRC Village   | 41                                 | 234                         | 105            | 95                      | 43              | 38                 |
|            |                     | Office Premises Bhubaneswar                                       | 47                                 | 218                         | 100            | 100                     | 41              | 42                 |
|            |                     | Water works, Palasuni, Rasalgarh                                  | 43                                 | 126                         | 90             | 69                      | 22              | 18                 |
|            |                     | Patrapara, Khandagiri   | 38                                 | 237                         | 97             | 101                     | 40              | 38                 |
|            |                     | Chandrashekharpur   | 42                                 | 244                         | 93             | 91                      | 27              | 38                 |
|            | Bonaigarh           | Govt. Hospital Bonai At/Po/PS-Bonai                               |                                    |                             |                |                         |                 |                    |
|            |                     | Dist-Sudargarh  | 58                                 | 209                         | 118            | 104                     | 62              | 33                 |
|            | Cuttack             | Traffic Tower, Badambadi  | 51                                 | 235                         | 108            | 58                      | 22              | 47                 |
|            |                     | P.H.D Office Barabati   | 57                                 | 362                         | 109            | 104                     | 34              | 57                 |
|            |                     | R.O. Cuttack Office, Surya Vihar                                  | 54                                 | 224                         | 100            | 104                     | 35              | 47                 |
|            | Jharsuguda          | R.O. Building Cox colony  | 79                                 | 160                         | 106            | 108                     | 71              | 12                 |
|            |                     | TRL Colony, M/s. TRL Krosaki Refractories Ltd. PO: Bhepahar,      | 92                                 | 394                         | 106            | 106                     | 72              | 29                 |
|            | Kalinga Nagar       | Over the Guest House of M/s NINL                                  | 46                                 | 209                         | 122            | 55                      | 35              | 39                 |
|            |                     | Maintenance Office of M/s NINL, Duburi                            | 27                                 | 438                         | 114            | 77                      | 48              | 54                 |
|            | Konark              | Konark Police Station   | 50                                 | 102                         | 72             | 101                     | 2               | 12                 |
|            | Paradeep            | On roof of PPT Staff Quarter                                      | 72                                 | 343                         | 146            | 101                     | 86              | 56                 |
|            |                     | On roof of PPL Gueest   | 76                                 | 342                         | 149            | 101                     | 84              | 61                 |
|            |                     | On roof of STP building IFFCO                                     | 69                                 | 316                         | 138            | 83                      | 62              | 62                 |
|            | Puri                | Sadar police station  | 87                                 | 141                         | 115            | 46                      | 35              | 15                 |
|            |                     | Town Police Station   | 87                                 | 163                         | 109            | 75                      | 48              | 15                 |
|            | Rajgangpur          | DISIR, Rajgangpur   | 73                                 | 272                         | 150            | 103                     | 79              | 46                 |
|            | Rayagada            | Regional Office Orissa SPCB                                       | 17                                 | 112                         | 63             | 104                     | 3               | 23                 |
|            |                     | LPS High School, Jaykaypur  | 15                                 | 118                         | 66             | 101                     | 2               | 23                 |
|            | Rourkela            | Regional Office, ORPB   | 52                                 | 178                         | 87             | 104                     | 6               | 13                 |
|            |                     | Kalunga Industrial Estate   | 78                                 | 242                         | 174            | 104                     | 90              | 45                 |
|            |                     | IDL Police Out-post, Sonaparbat                                   | 73                                 | 160                         | 90             | 104                     | 15              | 12                 |
|            |                     | Kuarmunda, Sundergarh   | 54                                 | 213                         | 142            | 104                     | 86              | 40                 |
|            | Sambalpur           | Filter Plant, PHD Office, Modipara                                | 29                                 | 266                         | 92             | 105                     | 44              | 38                 |
|            |                     | Coal Field Area   | 54                                 | 207                         | 119            | 104                     | 73              | 36                 |
|            | Talcher             | T.T.P.S.Colony  | 35                                 | 209                         | 93             | 104                     | 36              | 38                 |
| Puducherry | Karaikal            | B.Ed College (PKCE), Nehru Nagar                                  | 18                                 | 68                          | 35             | 88                      | 0               | 9                  |
|            |                     | Govt. Tourist Home, Kovilpathu                                    | 22                                 | 118                         | 46             | 91                      | 1               | 15                 |
|            |                     | M/s Puducherry Power Corporation Limited, Polagam, T.R. Pattinam, | 17                                 | 92                          | 42             | 82                      | 0               | 15                 |
|            | Puducherry          | DSTC Office Upstairs, PHB 3rd Floor, AnnaNagar                    | 21                                 | 81                          | 47             | 94                      | 0               | 13                 |
|            |                     | PIPDIC Ind. Estate Mettupalayam                                   | 21                                 | 87                          | 50             | 88                      | 0               | 11                 |
| Punjab     | Aligarh (Jagraon)   | Forest Office, Vill:Aligarh, Teh:Jagraon                          | 22                                 | 199                         | 73             | 106                     | 19              | 37                 |
|            | Amritsar            | R.O. Focal Point (earlier Nagina soap factory)                    | 46                                 | 313                         | 155            | 62                      | 53              | 55                 |
|            |                     | Vinod Chilling Center / Kochar Bhavan (earlier A-1,Platers)       | 76                                 | 366                         | 185            | 60                      | 58              | 62                 |
|            |                     | Aspal Khurd (Tapa)  | 64                                 | 213                         | 107            | 127                     | 69              | 25                 |
|            | Bara Pind (Goraya)  | Vill:Bara Pind, Teh:Goraya  | 53                                 | 338                         | 150            | 85                      | 60              | 66                 |
|            | Bhatinda            | Bathinda Milk Producers, Dabwali Road                             | 53                                 | 194                         | 106            | 90                      | 47              | 24                 |
|            | Binjon (Garshankar) | CHC, Vill:Binjon, Teh: Garshankar                                 | 23                                 | 249                         | 102            | 80                      | 39              | 38                 |
|            | Bishanpura (Payal)  | Longowalia Yarns (Unit-II), Vill:Bishanpura, Teh: Payal           | 19                                 | 374                         | 137            | 100                     | 65              | 74                 |
|            | Changal (Sangrur)   | Mastuana Sahib, Vill:Changal, Teh:Sangrur                         | 53                                 | 240                         | 105            | 122                     | 52              | 34                 |

Annexure 5: Location wise PM<sub>10</sub> - 2019

| State     | City                       | Location  | Concentration in µg/m <sup>3</sup> |                             |                | No. of days in the year |                 | Standard deviation |
|-----------|----------------------------|---|------------------------------------|-----------------------------|----------------|-------------------------|-----------------|--------------------|
|           |                            |   | Minimum (24-hourly average)        | Maximum (24-hourly average) | Annual Average | Monitored               | Exceeding NAAQS |                    |
| Punjab    | Chowkimann (Jagraon)       | Ludhiana College of Engineering, Vill:Chowkimann, Teh:Jagraon   | 20                                 | 170                         | 68             | 108                     | 16              | 34                 |
|           | Dera Baba Nanak            | C-PYTE Building   | 25                                 | 199                         | 70             | 68                      | 7               | 28                 |
|           | Dera Bassi                 | Punjab Chem and Crop Protection, Bhanakarpur Rd   | 41                                 | 174                         | 101            | 106                     | 53              | 21                 |
|           |                            | Winsome Yarns Ltd., Barwala Road  | 51                                 | 150                         | 94             | 114                     | 30              | 21                 |
|           | Fatehpur (Samana)          | Baba Banda Singh Bahadur College, Vill:Fatehpur, Teh:Samana   | 79                                 | 107                         | 95             | 38                      | 11              | 7                  |
|           | Gobindgarh                 | Modi Oil and General Mills, Mandi   | 91                                 | 219                         | 147            | 126                     | 121             | 34                 |
|           |                            | Raj Steel Rolling Mills, Mandi  | 86                                 | 238                         | 140            | 134                     | 123             | 33                 |
|           |                            | United Rolling Mills, Mandi Gobindgarh  | 84                                 | 229                         | 138            | 131                     | 120             | 30                 |
|           | Guru Ki Dhab (Kotkapura)   | Vil:Guru Ki Dhab / Basti Himmatpura, Teh:Kotkapura  | 74                                 | 212                         | 124            | 22                      | 17              | 38                 |
|           | Jaito Sarja (Batala)       | Royal Nursing College, Vill: Jaito Sarja, Teh: Batala   | 21                                 | 109                         | 60             | 37                      | 3               | 26                 |
| Haryana   | Jalandhar                  | Municipal Council Tubewell No. 27   | 62                                 | 315                         | 151            | 81                      | 71              | 54                 |
|           |                            | Regional Office   | 57                                 | 329                         | 144            | 74                      | 58              | 62                 |
|           |                            | Punjab Maltex , Kapurthala Road   | 35                                 | 296                         | 120            | 59                      | 22              | 66                 |
|           |                            | Focal Point   | 62                                 | 259                         | 131            | 62                      | 50              | 34                 |
|           | Khanna                     | Markfed Vanaspati, Khanna   | 78                                 | 368                         | 192            | 113                     | 110             | 58                 |
|           |                            | AS School, Khanna   | 45                                 | 289                         | 137            | 118                     | 90              | 48                 |
|           | Kharaori (Sirhind)         | Vill:Kharaori, Teh:Sirhind  | 68                                 | 190                         | 100            | 128                     | 45              | 17                 |
|           | Kotladoom (Ajnala)         | Satyam College, Ramtirath Road, Vill: Kotladoom, Teh: Ajnala  | 49                                 | 395                         | 128            | 62                      | 35              | 60                 |
|           | Lakho ke Behram (Ferozpur) | Vill:Lakho ke Behram, Teh:Ferozpur  | 73                                 | 169                         |                | 11                      | 7               | 31                 |
|           | Ludhiana                   | Bharat Nagar Chowk / RO Gill Road   | 35                                 | 331                         | 139            | 120                     | 94              | 50                 |
|           |                            | Nahar Spining Mills, Dholewal Chawk   | 53                                 | 383                         | 151            | 129                     | 109             | 51                 |
|           |                            | Ludhiana Coop. Milk Producer, Ferozpur Rd   | 33                                 | 392                         | 135            | 141                     | 81              | 80                 |
|           |                            | PPCB Office Building, Vishavkarma Chowk   | 80                                 | 498                         | 187            | 132                     | 123             | 85                 |
| Punjab    | Mrar Kalan (Muktsar)       | Vill: Mrar Kalan, Teh:Muktsar   | 55                                 | 228                         | 111            | 66                      | 35              | 36                 |
|           | Mukandpur (Nawashahar)     | Govt. Senior Sec. School, Vill:Mukandpur, Teh:Nawashahar  | 58                                 | 247                         | 134            | 78                      | 57              | 48                 |
|           | Mureedke (Batala)          | Johal Farm, Vill: Mureedke, Teh: Batala   | 21                                 | 142                         | 87             | 98                      | 45              | 30                 |
|           | Naudhrani (Malerkotla)     | Vill:Naudhrani, Teh:Malerkotla  | 55                                 | 198                         | 108            | 127                     | 69              | 27                 |
|           | Naya Nangal                | Punjab Alkalis & Chemicals Ltd  | 40                                 | 159                         | 88             | 94                      | 22              | 24                 |
|           |                            | M/s NFL Guest House,Naya Nangal   | 39                                 | 154                         | 93             | 107                     | 35              | 23                 |
|           | Patiala                    | Ceylon Industries, Factory Area, Patiala  | 74                                 | 190                         | 101            | 130                     | 42              | 18                 |
|           |                            | Fire Brigade Station, Bahera Road, Patiala  | 78                                 | 197                         | 102            | 133                     | 43              | 21                 |
|           | Peer Mohammad (Jalalabad)  | Vill:Peer Mohammad, Teh:Jalalabad   | 69                                 | 133                         | 102            | 41                      | 23              | 16                 |
|           | Poohli (Bhatinda)          | Vill: Poohli, Teh:Bhatinda  | 64                                 | 337                         | 114            | 57                      | 29              | 44                 |
| Rajasthan | Qila Bharian (Sangrur)     | Gurdwara Gangsar Sahib, Vill:Qila Bharian, Teh:Sangrur  | 49                                 | 178                         | 104            | 135                     | 69              | 26                 |
|           | Rakhra (Patiala)           | Shree Ganesh Group of Institute, Vill:Rakhra, The:Patiala   | 64                                 | 129                         | 98             | 53                      | 24              | 10                 |
|           |                            | Gopimal Kaur Sain Industries Pvt. Ltd, Vil:Rohila, Teh:Samrala  | 21                                 | 575                         | 159            | 123                     | 94              | 95                 |
|           | Tirathpur (Amritsar I)     | United ITI, Vill: Tirathpur, Teh:Amritsar I (earlier Sri Guru Harkishan Public School,Rasulpur Kalan) | 25                                 | 202                         | 93             | 58                      | 18              | 35                 |
|           | Alwar                      | Rajasthan State Pollution Control Board   | 75                                 | 244                         | 154            | 98                      | 85              | 43                 |
|           |                            | Gaurav Solvex Ltd. MIA  | 72                                 | 349                         | 197            | 103                     | 102             | 51                 |
|           | Bharatpur                  | RIICO Pump House, MIA   | 79                                 | 274                         | 164            | 105                     | 99              | 41                 |
|           |                            | Khadi Gramoday Samiti   | 83                                 | 561                         | 213            | 96                      | 91              | 82                 |
|           |                            | RIICO office Building   | 69                                 | 474                         | 218            | 98                      | 91              | 89                 |
|           |                            | RO, Building  | 61                                 | 324                         | 167            | 102                     | 96              | 61                 |
|           | Bhiwadi                    | R.O.Building  | 101                                | 442                         | 245            | 103                     | 103             | 85                 |

Annexure 5: Location wise PM<sub>10</sub> - 2019

| State       | City        | Location   | Concentration in µg/m <sup>3</sup> |                             |                | No. of days in the year |                 | Standard deviation |
|-------------|-------------|--|------------------------------------|-----------------------------|----------------|-------------------------|-----------------|--------------------|
|             |             |  | Minimum (24-hourly average)        | Maximum (24-hourly average) | Annual Average | Monitored               | Exceeding NAAQS |                    |
| Rajasthan   | Chittorgarh | UIT Guest House  | 149                                | 442                         | 290            | 38                      | 38              | 78                 |
|             |             | Uttam Strips Ltd   | 103                                | 415                         | 231            | 97                      | 97              | 80                 |
|             | Jaipur      | Regional Office building, RSPCB, Near FCI Godown, Chnaderiya | 40                                 | 292                         | 168            | 101                     | 90              | 58                 |
|             |             | Veterinary Hospital, Meeranagar                              | 39                                 | 311                         | 162            | 95                      | 76              | 67                 |
|             |             | PHED Pump House, Segawa                                      | 31                                 | 204                         | 97             | 96                      | 41              | 35                 |
|             | Jodhpur     | Ajmeri Gate  | 63                                 | 377                         | 163            | 107                     | 99              | 49                 |
|             |             | RJPB Office,Jhalana Doongari                                 | 37                                 | 225                         | 103            | 104                     | 45              | 39                 |
|             |             | District Education Officer, Chandpole                        | 52                                 | 323                         | 151            | 101                     | 92              | 49                 |
|             |             | RIICO Office, M.I.A.   | 34                                 | 279                         | 108            | 104                     | 51              | 45                 |
|             |             | RSPCB, Vidyadhar Nagar                                       | 46                                 | 413                         | 160            | 104                     | 98              | 60                 |
|             |             | VKIA   | 51                                 | 498                         | 193            | 104                     | 98              | 73                 |
|             |             | 22,Godam, RIICO Office                                       | 65                                 | 281                         | 142            | 107                     | 98              | 38                 |
|             |             | Mansarovar Nagar Niigam                                      | 63                                 | 225                         | 128            | 99                      | 82              | 33                 |
|             |             | RIICO Office Sitapura Industrial Area                        | 63                                 | 221                         | 120            | 103                     | 76              | 28                 |
| Uttarakhand | Kota        | DIC Office, Industrial Estate                                | 60                                 | 507                         | 187            | 85                      | 72              | 83                 |
|             |             | Sojati Gate  | 76                                 | 396                         | 220            | 77                      | 71              | 77                 |
|             |             | Basni Industrial Area, RIICO Office                          | 46                                 | 489                         | 172            | 87                      | 73              | 84                 |
|             |             | Maha Mandir Police Thane                                     | 54                                 | 412                         | 205            | 83                      | 72              | 87                 |
|             |             | Office of Housing Board, Chopasani Road                      | 69                                 | 512                         | 244            | 82                      | 77              | 104                |
|             |             | Shastri Nagar Police Thana                                   | 81                                 | 613                         | 245            | 86                      | 80              | 112                |
|             |             | Kudi Mahila Thana  | 102                                | 520                         | 248            | 50                      | 50              | 103                |
|             |             | Sangariya Police Choki                                       | 110                                | 634                         | 344            | 47                      | 47              | 109                |
|             |             | SoorsagarThana   | 85                                 | 973                         | 293            | 47                      | 46              | 131                |
|             | Udaipur     | Regional Office, RJPB, Anantpura                             | 30                                 | 382                         | 152            | 99                      | 73              | 73                 |
|             |             | Municipal Corporation Building                               | 21                                 | 251                         | 116            | 104                     | 67              | 58                 |
|             |             | Samcore Glass Ltd.   | 22                                 | 303                         | 115            | 109                     | 68              | 59                 |
|             |             | FireStation Nagar Nigam Shrinathpuram                        | 21                                 | 272                         | 115            | 104                     | 65              | 56                 |
|             |             | RajasthanTechnical University,Rawatbhata                     | 21                                 | 373                         | 160            | 103                     | 76              | 93                 |
|             |             | Sewage Treatment Plant, Balita, Kota                         | 19                                 | 348                         | 116            | 107                     | 72              | 55                 |
| Sikkim      | Kangra      | Ambamata   | 55                                 | 254                         | 131            | 103                     | 77              | 42                 |
|             |             | Town Hall  | 61                                 | 258                         | 152            | 105                     | 89              | 48                 |
|             |             | Regional Office,MIA  | 92                                 | 254                         | 186            | 104                     | 102             | 37                 |
|             |             | Chungthang   | 16                                 | 47                          | 28             | 90                      | 0               | 7                  |
|             |             | Gangtok  | 21                                 | 83                          | 49             | 75                      | 0               | 15                 |
|             |             | Mangan   | 13                                 | 62                          | 34             | 101                     | 0               | 11                 |
|             |             | Namchi   | 22                                 | 856                         | 41             | 98                      | 1               | 83                 |
|             | Pelling     | The Pelling Girls Hostel                                     | 9                                  | 77                          | 28             | 89                      | 0               | 14                 |
| Tamilnadu   | Chennai     | Rangpo   | 30                                 | 100                         | 64             | 94                      | 0               | 20                 |
|             |             | Ravangla   | 13                                 | 38                          | 25             | 95                      | 0               | 4                  |
|             |             | Singtam  | 33                                 | 70                          | 54             | 93                      | 0               | 7                  |
|             |             | Govt. High School, Manali                                    | 42                                 | 81                          | 63             | 58                      | 0               | 10                 |
|             |             | Kathivakkam  | 41                                 | 116                         | 62             | 62                      | 2               | 15                 |
|             |             | Thiruvottiyur  | 38                                 | 87                          | 61             | 62                      | 0               | 10                 |
|             |             | Madras Medical College                                       | 12                                 | 138                         | 67             | 86                      | 5               | 21                 |
|             |             | NEERI, CSIR CampusTaramani                                   | 17                                 | 128                         | 39             | 86                      | 1               | 15                 |
|             |             | Thiruvottiyur Municipal Office                               | 11                                 | 186                         | 85             | 87                      | 23              | 29                 |
|             |             | Adiyar   | 28                                 | 98                          | 59             | 57                      | 0               | 15                 |
|             | Coimbatore  | Kilpauk  | 53                                 | 231                         | 101            | 66                      | 26              | 40                 |
|             |             | Thiyagaraya Nagar  | 47                                 | 181                         | 88             | 68                      | 17              | 30                 |
|             |             | Nunbakgum  | 48                                 | 141                         | 82             | 82                      | 14              | 22                 |
|             |             | Anna Nagar   | 55                                 | 183                         | 97             | 53                      | 21              | 29                 |
|             |             | Poniarajapuram, On the top of DEL                            | 13                                 | 96                          | 41             | 83                      | 0               | 16                 |
|             |             | G.D.Matric Hr.Sec.School                                     | 21                                 | 140                         | 68             | 69                      | 13              | 31                 |
|             |             | SIDCO Office, Coimbatore/ Kurichi                            | 23                                 | 204                         | 61             | 75                      | 3               | 26                 |
|             | Cuddalore   | Eachangadu Village   | 47                                 | 55                          | 52             | 94                      | 0               | 2                  |
|             |             | SIPCOT (Project Office)                                      | 41                                 | 280                         | 52             | 81                      | 2               | 30                 |
|             |             | DEE Office, Cuddalore  | 49                                 | 70                          | 62             | 75                      | 0               | 4                  |
|             | Madurai     | Highway (Project -I) Building                                | 46                                 | 95                          | 71             | 70                      | 0               | 16                 |
|             |             | Fenner (I) Ltd. Kochadai                                     | 32                                 | 139                         | 83             | 67                      | 16              | 23                 |

Annexure 5: Location wise PM<sub>10</sub> - 2019

| State         | City                                    | Location   | Concentration in µg/m <sup>3</sup>     |                             |                | No. of days in the year |                 | Standard deviation |  |
|---------------|---|--|--|-----------------------------|----------------|-------------------------|-----------------|--------------------|--|
|               |   |  | Minimum (24-hourly average)            | Maximum (24-hourly average) | Annual Average | Monitored               | Exceeding NAAQS |                    |  |
| Tamil Nadu    | Trichy                                  | Kunnathur Chatram Avvai Girls HS School                            | 31                                     | 144                         | 82             | 75                      | 22              | 27                 |  |
|               |   | Raman Nagar  | 18                                     | 74                          | 38             | 79                      | 0               | 14                 |  |
|               |   | SIDCO  | 17                                     | 244                         | 71             | 76                      | 19              | 42                 |  |
|               |   | Sowdeswari College Building  | 21                                     | 183                         | 50             | 77                      | 2               | 25                 |  |
|               |   | Gandhi Market  | 19                                     | 148                         | 79             | 68                      | 22              | 32                 |  |
|               |   | Main Guard Gate  | 31                                     | 140                         | 82             | 66                      | 23              | 28                 |  |
|               |   | Bishop Heber College   | 27                                     | 101                         | 60             | 75                      | 1               | 20                 |  |
|               |   | Golden Rock  | 23                                     | 120                         | 60             | 72                      | 4               | 24                 |  |
|               |   | Central Bus Stand  | 18                                     | 140                         | 82             | 69                      | 28              | 32                 |  |
|               |   | Fisheries College, Tuticorin Sipcot                                | 41                                     | 112                         | 83             | 72                      | 8               | 14                 |  |
|               | Tuticorin                               | Raja Agencies  | 55                                     | 126                         | 91             | 66                      | 16              | 14                 |  |
|               |   | AVM Jewellery Building   | 44                                     | 127                         | 83             | 82                      | 7               | 14                 |  |
| Telangana     | Hyderabad                               | Building of SCCL Manadamarri Club Mandamarri, Mancherial           | 50                                     | 85                          | 74             | 108                     | 0               | 6                  |  |
|               |   | Balanagar  | 36                                     | 386                         | 148            | 104                     | 79              | 57                 |  |
|               |   | Tarnaka, NEERI Lab. IICT Campus                                    | 3                                      | 130                         | 49             | 96                      | 4               | 31                 |  |
|               |   | Nacharam, Industrial Estate  | 3                                      | 129                         | 48             | 96                      | 5               | 31                 |  |
|               |   | ABIDS Circle General Post Office                                   | 3                                      | 123                         | 57             | 96                      | 2               | 29                 |  |
|               |   | Uppal, Modern Foods & Industries IDA                               | 50                                     | 235                         | 117            | 112                     | 62              | 42                 |  |
|               |   | Jubilee Hills  | 47                                     | 261                         | 116            | 119                     | 68              | 42                 |  |
|               |   | Paradise   | 46                                     | 208                         | 110            | 117                     | 68              | 32                 |  |
|               |   | Charminar  | 37                                     | 381                         | 108            | 119                     | 61              | 46                 |  |
|               |   | Zoo Park   | 12                                     | 381                         | 104            | 114                     | 59              | 59                 |  |
|               | Khammam                                 | Jeedimetla Industrial Estate, Rangareddy Distt.                    | 44                                     | 381                         | 131            | 118                     | 81              | 53                 |  |
|               |   | Karimnagar   | 87                                     | 140                         | 106            | 95                      | 73              | 8                  |  |
|               |   | CER Club Khamam  | 72                                     | 118                         | 95             | 101                     | 27              | 10                 |  |
|               |   | Jalasoudha building  | 72                                     | 109                         | 86             | 102                     | 2               | 7                  |  |
|               |   | Kothur   | Mehaboobnagar                          | 92                          | 141            | 111                     | 105             | 97                 |  |
|               |   | Nalgonda   | AP PCB Nalgonda                        | 48                          | 75             | 57                      | 99              | 0                  |  |
|               |   | M/s. Sriniv Pharmaceuticals pvt. Ltd.Choutuppal (V & M)            | 53                                     | 75                          | 61             | 99                      | 0               | 3                  |  |
|               |   | Nizamabad  | subashnagar,nizamabad dist             | 53                          | 72             | 63                      | 99              | 0                  |  |
|               |   | Patencheru   | Police Station, Medak, Ramachadrapuram | 45                          | 106            | 83                      | 96              | 9                  |  |
|               |   | Ramagundam   | Godavarikhani, Ramagundam, Karimnagar  | 61                          | 144            | 107                     | 100             | 81                 |  |
| Tripura       | Agartala                                | Pashamylaram/Municipal Office                                      | 12                                     | 381                         | 104            | 118                     | 52              | 64                 |  |
|               |   | Regional office Building of SANGAREDDY                             | 39                                     | 102                         | 70             | 96                      | 1               | 13                 |  |
|               |   | M/s. Mylan Industries, Gaddapothara                                | 53                                     | 116                         | 88             | 99                      | 13              | 13                 |  |
|               |   | Warangal   | KUDA Office, Hanumakonda               | 63                          | 110            | 88                      | 105             | 3                  |  |
|               |   | Mee-Seva Building ,Municipal Complex                               | 57                                     | 108                         | 87             | 104                     | 4               | 7                  |  |
|               | Agra                                    | SPCB, Pavivesh Bhawan, Pandit Nehru Complex, Gorkhabasti, Kunjaban | 28                                     | 65                          | 48             | 83                      | 0               | 6                  |  |
|               |   | Bordowali Bipani Bitan, Agartala MC, Bordowali, Near Nagerjala     | 83                                     | 125                         | 105            | 83                      | 62              | 8                  |  |
| Uttar Pradesh |   | Regional Office, Bodla   | 47                                     | 505                         | 192            | 87                      | 73              | 94                 |  |
|               |   | Nunhai   | 49                                     | 494                         | 228            | 92                      | 80              | 99                 |  |
|               |   | Taj Mahal  | 13                                     | 509                         | 150            | 298                     | 194             | 99                 |  |
|               |   | DIC Nunhai   | 23                                     | 501                         | 207            | 124                     | 91              | 123                |  |
|               |   | Etmad-uddaulah   | 23                                     | 496                         | 173            | 126                     | 88              | 113                |  |
|               |   | Rambagh  | 21                                     | 477                         | 165            | 123                     | 87              | 96                 |  |
| Allahabad     | Square crossing circle of Laxmi Talkies | 136  | 488                                    | 258                         | 106            | 106                     | 75              |                    |  |
|               | Bharat Yantra Nigam Ltd                 | 116  | 405                                    | 208                         | 108            | 108                     | 51              |                    |  |
|               | Alopibagh/Sewage Pumping Stations       | 119  | 400                                    | 252                         | 76             | 76                      | 54              |                    |  |
|               | Jhonstonganj/co-operative Bank          | 82   | 251                                    | 171                         | 98             | 91                      | 44              |                    |  |
|               | Rambagh/Parag Dairy                     | 80   | 332                                    | 220                         | 102            | 100                     | 57              |                    |  |
| Anpara        | Anpara Colony, Sonabhadra               | 42   | 287                                    | 176                         | 101            | 94                      | 53              |                    |  |
|               | Renusagar Colony, Sonabhadra            | 41   | 264                                    | 166                         | 103            | 95                      | 47              |                    |  |

Annexure 5: Location wise PM<sub>10</sub> - 2019

| State | City   | Location   | Concentration in µg/m <sup>3</sup> |                             |                | No. of days in the year |                 | Standard deviation |
|-------|--|--|------------------------------------|-----------------------------|----------------|-------------------------|-----------------|--------------------|
|       |  |  | Minimum (24-hourly average)        | Maximum (24-hourly average) | Annual Average | Monitored               | Exceeding NAAQS |                    |
|       | Baghpat  | Sarvodaya Hospital, Tatiri Merrut,<br>Baghpat Road<br>Weavetex Overseas Hostel, Khekra,<br>Baghpat | 73                                 | 475                         | 168            | 94                      | 90              | 64                 |
|       |  |  | 93                                 | 480                         | 175            | 94                      | 92              | 68                 |
|       | Bareily  | IVRI Izatnaga  | 79                                 | 547                         | 163            | 107                     | 86              | 64                 |
|       |  | Indian oetrol pump, Civil Line   | 103                                | 679                         | 237            | 107                     | 107             | 116                |
|       | Firozabad  | Center for Development of Glass Industry   | 63                                 | 464                         | 215            | 102                     | 90              | 97                 |
|       |  | Tilak Nagar  | 54                                 | 488                         | 215            | 104                     | 87              | 98                 |
|       |  | Raza ka Tal  | 57                                 | 439                         | 211            | 103                     | 90              | 92                 |
|       | Gajraula   | Raunaq Auto Ltd, J.P. Nagar  | 126                                | 421                         | 213            | 94                      | 94              | 50                 |
|       |  | Indira Chowk, J.P. Nagar   | 96                                 | 382                         | 244            | 89                      | 88              | 43                 |
|       | Ghaziabad  | Atlas Cycles Industries, Sahibabad Ind. area   | 46                                 | 616                         | 231            | 93                      | 83              | 123                |
|       |  | Bulandshaar Road Industrial Area   | 49                                 | 694                         | 232            | 87                      | 75              | 132                |
|       |  | Khora Colony, Ghaziabad<br>Vinoba Bhave Park, Lohia Nagar,<br>Ghaziabad                            | 72                                 | 514                         | 184            | 86                      | 83              | 75                 |
|       |  |  | 92                                 | 505                         | 184            | 85                      | 83              | 71                 |
|       |  |  | 103                                | 336                         | 218            | 93                      | 93              | 65                 |
|       |  | India Glycol Ltd. Gida, Gorakhpur  | 164                                | 443                         | 351            | 101                     | 101             | 45                 |
|       |  | Jalkal, Municipal Corporation, Golghar   | 136                                | 429                         | 315            | 92                      | 92              | 45                 |
|       |  | Holland Tractor, Greater Noida   | 93                                 | 501                         | 189            | 88                      | 86              | 78                 |
|       |  | Honda Power, Greater Noida   | 91                                 | 489                         | 190            | 88                      | 87              | 79                 |
|       |  | Srinagar Colony, Railway Road, Hapur<br>Jindal Pipes Ltd, Hapur                                    | 51                                 | 520                         | 208            | 89                      | 73              | 110                |
|       |  |  | 64                                 | 577                         | 248            | 70                      | 65              | 115                |
|       | Jhansi   | Manik Chawk / Jal chauraha   | 31                                 | 237                         | 105            | 117                     | 78              | 29                 |
|       |  | Veeranga Nagar   | 24                                 | 207                         | 86             | 117                     | 31              | 25                 |
|       | Kanpur   | Forest & Training Centre, Kidwai Nagar   | 120                                | 288                         | 210            | 93                      | 93              | 45                 |
|       |  | Chamber Of Commerce Darshanpurwa / Deputy ka Parao   | 119                                | 280                         | 221            | 94                      | 94              | 39                 |
|       |  | Associated Chem Pvt Ltd, Fazalganj, Panki, Site-5  | 94                                 | 336                         | 228            | 83                      | 82              | 49                 |
|       |  | Head Post Office, Govind Nagar / Dabauli / Shastri NGR   | 112                                | 298                         | 192            | 83                      | 83              | 44                 |
|       |  | Jajmau / Awas Vikas  | 102                                | 261                         | 188            | 93                      | 93              | 40                 |
|       |  | I.I.T. Campus, Kanpur  | 11                                 | 399                         | 124            | 101                     | 58              | 77                 |
|       |  | IIT 12 parameter   | 28                                 | 331                         | 117            | 88                      | 47              | 64                 |
|       |  | Dada Nagar, Kanpur   | 26                                 | 600                         | 228            | 94                      | 78              | 124                |
|       |  | Ramadevi, Kanpur   | 32                                 | 746                         | 273            | 93                      | 76              | 161                |
|       |  | Central Glass & Ceramic Research Institute   | 21                                 | 401                         | 204            | 103                     | 85              | 92                 |
|       | Khurja   | Ahirpara   | 19                                 | 384                         | 186            | 92                      | 77              | 77                 |
|       |  | Mahanagar  | 40                                 | 411                         | 207            | 225                     | 205             | 86                 |
|       | Lucknow  | Chandganj Garden, Aliganj  | 40                                 | 411                         | 206            | 270                     | 242             | 86                 |
|       |  | Kapoor Hotel, Hazratganj   | 40                                 | 411                         | 219            | 187                     | 172             | 87                 |
|       |  | Talkatora  | 31                                 | 411                         | 205            | 268                     | 239             | 87                 |
|       |  | Aminabad / S.M.K Chowk   | 40                                 | 411                         | 206            | 279                     | 253             | 85                 |
|       |  | Nagar Nigam  | 34                                 | 411                         | 207            | 268                     | 231             | 91                 |
|       |  | Ansal Technical Institute Campus, Ansal API  | 34                                 | 411                         | 202            | 266                     | 227             | 89                 |
|       |  | Vikas Khand  | 29                                 | 464                         | 209            | 68                      | 53              | 115                |
|       |  | RO. UPPCB, 65 Baldevpuri, Maholi Road  | 110                                | 188                         | 153            | 81                      | 81              | 20                 |
|       |  | CETP, Industrial Area, Mathura   | 138                                | 191                         | 170            | 82                      | 82              | 13                 |
|       |  | Begum Bridge<br>Thana Railway Road / Kesarganj   | 216                                | 237                         | 225            | 59                      | 59              | 6                  |
|       | Moradabad  |  | 189                                | 213                         | 200            | 59                      | 59              | 8                  |
|       | Hindu College, Station Road  | 61   | 464                                | 275                         | 91             | 90                      | 61              |                    |
|       | Central Police Hospital, Civil Lines   | 110  | 399                                | 204                         | 90             | 90                      | 54              |                    |
|       | Sahara Parivar Office, Kamal Cinema, Building, Railway Station Road<br>Lekhpal Bhawan, Tehsil Sadar Campus | 47   | 417                                | 194                         | 97             | 85                      | 96              |                    |
|       |  | Muzaffarnagar  |                                    | 60                          | 360            | 187                     | 97              | 88                 |
|       | Noida  | 47   | 1073                               | 235                         | 97             | 79                      | 149             |                    |

Annexure 5: Location wise PM<sub>10</sub> - 2019

| State | City        | Location                                    | Concentration in µg/m <sup>3</sup>                 |                             |                | No. of days in the year |                 | Standard deviation |    |
|-------|-------------|---|--|-----------------------------|----------------|-------------------------|-----------------|--------------------|----|
|       |             |   | Minimum (24-hourly average)                        | Maximum (24-hourly average) | Annual Average | Monitored               | Exceeding NAAQS |                    |    |
|       |             | Gee-Pee Electroplating and Eng. Work        | 56   | 569                         | 233            | 96                      | 85              | 110                |    |
|       |             | Subros, Noida                               | 73   | 803                         | 188            | 92                      | 90              | 102                |    |
|       |             | Golf Course, Noida                          | 97   | 492                         | 191            | 90                      | 87              | 79                 |    |
|       | Raebareli   | Town Hall Colony, Ahmad Nagar, Gulab Road   | 80   | 372                         | 153            | 54                      | 46              | 53                 |    |
|       |             | Khoya mandi Tiraha Lucknow Road Raebareli   | 95   | 394                         | 170            | 54                      | 52              | 53                 |    |
|       |             | Amawan Road Ind. Area Raebareli             | 95   | 345                         | 167            | 54                      | 52              | 48                 |    |
|       | Saharanpur  | SRE-A, IIT Roorkee, Saharanpur Campus       | 50   | 344                         | 167            | 92                      | 82              | 54                 |    |
|       |             | UPCL S.E. Office, Near Clock Tower          | 52   | 334                         | 165            | 91                      | 80              | 49                 |    |
|       | Unnao       | H. No. 5, Krishna Nagar                     | 79   | 174                         | 105            | 88                      | 50              | 15                 |    |
|       |             | IIA Building, Industrial Area, Site 10      | 142  | 185                         | 166            | 88                      | 88              | 10                 |    |
|       | Varanasi    | Regional Office, Jawahar Nagar              | 41   | 388                         | 196            | 98                      | 81              | 77                 |    |
|       |             | Sigra                                       | 41   | 388                         | 194            | 191                     | 156             | 78                 |    |
|       |             | Saket Nagar                                 | 77   | 305                         | 176            | 93                      | 83              | 59                 |    |
|       |             | Banaras Hindu University                    | 63   | 236                         | 142            | 91                      | 72              | 46                 |    |
|       |             | Chandpur                                    | 94   | 356                         | 210            | 88                      | 86              | 70                 |    |
|       | Uttarakhand | Raipur Road, Near parag Diary               | 93   | 150                         | 127            | 69                      | 67              | 12                 |    |
|       |             | Clock Tower, PWD Guest House                | 128  | 218                         | 171            | 70                      | 70              | 20                 |    |
|       |             | Himalaya Drug Co. Near ISBT                 | 145  | 260                         | 205            | 68                      | 68              | 25                 |    |
|       |             | Dehradun                                    | Govt. Women Hospital                               | 92                          | 218            | 111                     | 103             | 97                 | 12 |
|       |             | Haldwani                                    | SIDCUL, Haridwar                                   | 104                         | 161            | 131                     | 78              | 78                 | 14 |
|       |             | Haridwar                                    | Kashipur   | 109                         | 236            | 132                     | 70              | 70                 | 19 |
|       | West Bengal | Kashipur                                    | BSNL Office, Kashipur                              | 99                          | 215            | 137                     | 82              | 80                 | 29 |
|       |             | Rishikesh                                   | Nagar Palika Parishad                              | 110                         | 277            | 132                     | 72              | 72                 | 22 |
|       |             | Rudrapur                                    | SIDCUL Office                                      | 43                          | 157            | 78                      | 103             | 17                 | 24 |
|       |             | Alipurduar                                  | Jaigaon Police Station                             | 44                          | 156            | 83                      | 102             | 19                 | 23 |
|       |             | Birpara Police Station                      | 47   | 210                         | 79             | 104                     | 16              | 27                 |    |
|       | Asansol     | Amtala                                      | P Roy Industrial Training Institute, Amtala        | 33                          | 254            | 84                      | 104             | 28                 | 45 |
|       |             | Asansol                                     | Asansol Municipal Corporation                      | 84                          | 261            | 182                     | 104             | 102                | 42 |
|       |             | Kangsabati Spinning Mill, Barjora           | 94   | 262                         | 184            | 104                     | 102             | 43                 |    |
|       |             | Baharampur                                  | Burnpur Town Department, Burnpur                   | 98                          | 258            | 187                     | 104             | 103                | 42 |
|       |             | Balurghat                                   | Baharampur Municipality                            | 67                          | 455            | 107                     | 104             | 52                 | 46 |
|       | Barasat     | Bankura                                     | Balurghar College                                  | 47                          | 217            | 89                      | 104             | 24                 | 37 |
|       |             | Bankura                                     | Bankura Municipality                               | 61                          | 141            | 99                      | 104             | 46                 | 19 |
|       |             | Bardhaman                                   | Barasat Municipality, 73 Rishi Bankim Chandra Road | 57                          | 567            | 118                     | 103             | 69                 | 63 |
|       |             | Bardhaman                                   | Bardhaman Town, Rajbati                            | 63                          | 136            | 103                     | 104             | 64                 | 19 |
|       |             | Barrackpore                                 | Barrackpore Municipiility                          | 69                          | 307            | 112                     | 104             | 70                 | 31 |
|       | Durgapur    | Dum Dum Telephone Exchange                  | 71   | 305                         | 116            | 103                     | 78              | 29                 |    |
|       |             | Khardah                                     | Municipality                                       | 82                          | 445            | 117                     | 103             | 76                 | 46 |
|       |             | Baruipur                                    | Baruipur Police Station, Baruipur                  | 28                          | 270            | 87                      | 104             | 31                 | 49 |
|       |             | Bolpur                                      | Bolpur Municipality                                | 62                          | 140            | 98                      | 104             | 49                 | 20 |
|       |             | Chinsura                                    | Chinsura Municipality, Pipulpatti Auto Stand       | 53                          | 324            | 112                     | 104             | 61                 | 36 |
|       | Coochbehar  | ABM Seal College                            | 45   | 173                         | 80             | 104                     | 19              | 24                 |    |
|       |             | Uttarbanga Krishi Visvavidyalaya, Pundibari | 44   | 179                         | 79             | 104                     | 18              | 28                 |    |
|       |             | Dankuni                                     | Krishnanagar Municipility, Dankuni                 | 58                          | 349            | 107                     | 104             | 56                 | 36 |
|       | Darjeeling  | Bose Institute Campus                       | 42   | 85                          | 57             | 104                     | 0               | 9                  |    |
|       |             | DMC Water Works, Angadpur                   | 102  | 262                         | 183            | 104                     | 104             | 43                 |    |
|       |             | Kwality Hotel, Bhiringi More, Benachiti     | 92   | 272                         | 182            | 104                     | 102             | 43                 |    |
|       | Haldia      | Bidhannagar, PCBL Club, Muchipara           | 87   | 249                         | 136            | 103                     | 101             | 34                 |    |
|       |             | Dew India Limited, PCBL More, Durgapur      | 93   | 253                         | 192            | 104                     | 103             | 45                 |    |
|       |             | Ghatal                                      | Annapurna Hotel, Ghatal-Panskura Bus Stand         | 39                          | 278            | 93                      | 107             | 35                 | 46 |
|       |             | Debhog Milan Viyapith, Bhabanipur           | 37   | 280                         | 89             | 107                     | 28              | 45                 |    |
|       | Haldia      | Bhunia Raichak, Driver's Hut, Bhunia        | 47   | 171                         | 85             | 105                     | 31              | 33                 |    |
|       |             | Supermarket Building, Durgachak             | 35   | 269                         | 85             | 106                     | 28              | 42                 |    |
|       |             | WBIIID Ruchi Soya Ind. Durgachak            | 33   | 221                         | 84             | 106                     | 32              | 44                 |    |

Annexure 5: Location wise PM<sub>10</sub> - 2019

| State       | City         | Location  | Concentration in µg/m <sup>3</sup>                          |                             |                | No. of days in the year |                 | Standard deviation |    |
|-------------|--------------|---|---|-----------------------------|----------------|-------------------------|-----------------|--------------------|----|
|             |              |   | Minimum (24-hourly average)                                 | Maximum (24-hourly average) | Annual Average | Monitored               | Exceeding NAAQS |                    |    |
| West Bengal | Howrah       | Howrah Municipal Corporation  | 75  | 453                         | 254            | 105                     | 101             | 89                 |    |
|             |              | Naskarpura Pump House, Ghuseri                                      | 44  | 442                         | 127            | 107                     | 42              | 88                 |    |
|             |              | CDS & Health Centre, Bator  | 54  | 338                         | 153            | 104                     | 73              | 68                 |    |
|             |              | Howrah Municipality School, Bandhaghat                              | 56  | 367                         | 164            | 104                     | 81              | 72                 |    |
|             |              | Jalpaiguri  | 50  | 131                         | 76             | 106                     | 0               | 19                 |    |
|             |              | Jhargram  | 36  | 169                         | 79             | 105                     | 25              | 32                 |    |
|             |              | Kalimpong   | 42  | 95                          | 58             | 104                     | 0               | 11                 |    |
|             |              | Kalyani   | College of Medicine & JNM Hospital, Kalyani Industrial Area | 75                          | 534            | 113                     | 104             | 62                 | 56 |
|             |              | Kharagpur   | AMD Building, TATA Bearing                                  | 46                          | 651            | 194                     | 106             | 95                 | 86 |
|             |              | Salt Lake, Rooftop of CK Market                                     | 24  | 258                         | 89             | 104                     | 28              | 53                 |    |
|             | Kolkata      | KMC office Building, Moulali  | 42  | 394                         | 118            | 104                     | 44              | 75                 |    |
|             |              | Minto Park, Inside Park AJC Bose Road                               | 26  | 316                         | 101            | 104                     | 38              | 64                 |    |
|             |              | Dunlop Bridge, National Sample Survey                               | 21  | 385                         | 125            | 104                     | 46              | 89                 |    |
|             |              | Behala Chowrasta, Traffic Guard Building                            | 27  | 334                         | 100            | 104                     | 40              | 72                 |    |
|             |              | Upanagar Sporting Club, Baishnabghata                               | 30  | 379                         | 104            | 104                     | 41              | 69                 |    |
|             |              | Cossipore Police Station, B.T. Road                                 | 14  | 568                         | 126            | 79                      | 36              | 118                |    |
|             |              | Dalhousie Square, Lal Bazaar Police Headqtr.                        | 16  | 610                         | 103            | 79                      | 30              | 292                |    |
|             |              | Kasba   | 18  | 318                         | 91             | 79                      | 29              | 74                 |    |
|             |              | RD CPCB   | 14  | 354                         | 102            | 110                     | 42              | 90                 |    |
|             |              | Infectious Diseases & BG Hospital, Beliaghata                       | 23  | 281                         | 96             | 104                     | 39              | 65                 |    |
|             |              | CESC Building, Mandeville Gardens, Gariahat                         | 23  | 281                         | 80             | 104                     | 23              | 61                 |    |
|             |              | Administrative Building, Hyde Road                                  | 71  | 334                         | 151            | 104                     | 87              | 56                 |    |
|             |              | KMC Drainage, Pumping Station, 9 Mominpur Road, Mominpur            | 29  | 259                         | 78             | 104                     | 22              | 53                 |    |
|             |              | Paribesh Bhawan   | 19  | 312                         | 98             | 104                     | 35              | 66                 |    |
|             |              | Milan Tirtha Club, Picnic Garden                                    | 40  | 260                         | 94             | 104                     | 32              | 48                 |    |
|             |              | Public Health Engineering Office Building, Rajarhat                 | 27  | 279                         | 92             | 104                     | 34              | 57                 |    |
|             |              | Tennis Club Biulding, 45-46 Canal West Road, Fariapukur, Shyambazar | 35  | 350                         | 110            | 104                     | 38              | 73                 |    |
|             |              | Elite India Rubber Products Pvt.Ltd., Topsia                        | 27  | 356                         | 114            | 104                     | 46              | 74                 |    |
|             |              | Maniktala Fire Station Building, 17, Bagmari Lane, Ultadanga        | 29  | 339                         | 115            | 104                     | 43              | 80                 |    |
|             |              | Tollygunge  | 23  | 282                         | 89             | 104                     | 30              | 52                 |    |
|             | Krishnanagar | Krishnanagar Municipility, TN Thakur Road                           | 72  | 316                         | 107            | 104                     | 55              | 33                 |    |
|             | Madhyamgram  | Madhyamgram Municipality  | 57  | 567                         | 118            | 103                     | 69              | 63                 |    |
|             | Malda        | WBPCB Office, Paribesh Bhaban, Vill. Abhirampur                     | 54  | 218                         | 101            | 105                     | 37              | 35                 |    |
|             | Medinipur    | Vidyasagar University   | 35  | 181                         | 80             | 107                     | 20              | 34                 |    |
|             | Purulia      | Purulia Municipality  | 55  | 135                         | 95             | 104                     | 42              | 19                 |    |
|             | Raigunj      | Raigunj College   | 46  | 160                         | 78             | 104                     | 16              | 21                 |    |
|             | Rampurhat    | Rampurhat Municipality  | 58  | 158                         | 102            | 104                     | 53              | 19                 |    |
|             | Ranaghat     | Ranaghat Municipality, 11 school lane                               | 65  | 409                         | 112            | 104                     | 58              | 45                 |    |
|             | Raniganj     | Raniganj Municipality   | 86  | 263                         | 188            | 104                     | 103             | 41                 |    |
|             |              | Mangalpur, SKS School Mangalpur                                     | 89  | 254                         | 185            | 104                     | 102             | 41                 |    |
|             | Rishra       | Jamuria Municipality  | 78  | 261                         | 186            | 104                     | 103             | 42                 |    |
|             | Sankrail     | Rishra Municipility   | 51  | 574                         | 118            | 104                     | 71              | 54                 |    |
|             |              | Bharat Co-op Housing Society  | 31  | 189                         | 81             | 104                     | 23              | 43                 |    |
|             |              | Bagan Police Station, Bagan   | 35  | 273                         | 106            | 104                     | 41              | 56                 |    |
|             |              | Dhulagar Gram Pachayat  | 48  | 339                         | 151            | 106                     | 71              | 72                 |    |
|             | Sankrail     | P Mukherjee's House, Near SBI Amta                                  | 42  | 289                         | 105            | 104                     | 42              | 64                 |    |
|             | Siliguri     | Siliguri  | 46  | 198                         | 80             | 105                     | 21              | 33                 |    |
|             | Suri         | Suri Municipality   | 62  | 140                         | 98             | 104                     | 47              | 19                 |    |
|             | Tamluk       | HP Gas Service Station, Maniktala                                   | 43  | 431                         | 108            | 106                     | 37              | 75                 |    |

Annexure 5: Location wise PM<sub>10</sub> - 2019

| State | City     | Location  | Concentration in $\mu\text{g}/\text{m}^3$ |                             |                | No. of days in the year |                 | Standard deviation |
|-------|----------|---|---|-----------------------------|----------------|-------------------------|-----------------|--------------------|
|       |          |   | Minimum (24-hourly average)               | Maximum (24-hourly average) | Annual Average | Monitored               | Exceeding NAAQS |                    |
|       | Tribeni  | Tribeni Health Center                                       | 43  | 506                         | 114            | 104                     | 62              | 56                 |
|       | Uluberia | ESI hospital nursing building, 3rd floor, Near Sahib Mandir | 36  | 255                         | 94             | 104                     | 37              | 51                 |

Note:

‘-’ data not available. Cities under Ecologically Sensitive Area (5 cities namely Alwar, Agra, Firozabad, Mathura, Dehradun) as notified by Central Government. The rest of the cities are under Industrial / Residential / Rural / others category of the National Ambient Air Quality Standard, 2009

Annual NAAQS of PM<sub>10</sub> is 60  $\mu\text{g}/\text{m}^3$  for Residential/ industrial / other area and for ecologically sensitive area.

**Levels of Particulate Matter ≤ 2.5 μm (PM<sub>2.5</sub>) in locations / Ambient Air Quality Monitoring Stations under NAMP during 2019**

| State          | City           | Location  | Concentration in μg/m <sup>3</sup>   |                             |                | No. of days in the year |                 | Standard deviation |
|----------------|----------------|---|--------------------------------------|-----------------------------|----------------|-------------------------|-----------------|--------------------|
|                |                |   | Minimum (24-hourly average)          | Maximum (24-hourly average) | Annual Average | Monitored               | Exceeding NAAQS |                    |
| Andhra Pradesh | Anantapur      | Kamala Nagar  | 12                                   | 65                          | 41             | 35                      | 1               | 14                 |
|                |                | APIIC Zonal office industrial estate  | 10                                   | 53                          | 24             | 65                      | 0               | 10                 |
|                |                | Cancer Unit, G.G.Hsharada Nagar, JNTU Road                                    | 13                                   | 32                          | 20             | 34                      | 0               | 4                  |
|                |                | D.No.6/5/545, Ram Nagar Colony  | 18                                   | 55                          | 34             | 72                      | 0               | 9                  |
|                | Chittoor       | GNC Toll Gate Tirumala  | 7                                    | 66                          | 24             | 80                      | 1               | 13                 |
|                |                | Near Nutrine Confectionery, Palamaner Road                                    | 10                                   | 49                          | 28             | 87                      | 0               | 7                  |
|                |                | O/O Mines and Geology, Old Collector Office, Greampet                         | 12                                   | 41                          | 27             | 71                      | 0               | 7                  |
|                | Eluru          | Ashram Diagnostic Centre  | 15                                   | 33                          | 22             | 45                      | 0               | 5                  |
|                |                | District Head quarters hospital   | 12                                   | 30                          | 16             | 39                      | 0               | 4                  |
|                | Guntur         | Near Hindu College, Market Road   | 21                                   | 48                          | 29             | 63                      | 0               | 5                  |
|                |                | A.P. Pollution Control Board, D.No.4-5-4/5C,4/3, Navabharath nagar, Ring Road | 13                                   | 31                          | 18             | 75                      | 0               | 3                  |
|                |                | Distirct Industries Center office Buiding Autonagar                           | 18                                   | 38                          | 25             | 63                      | 0               | 4                  |
|                |                | Government General hospital   | 11                                   | 33                          | 19             | 49                      | 0               | 3                  |
|                |                | Near ICL Industries, Yerragunta, YSR  | 10                                   | 48                          | 30             | 81                      | 0               | 8                  |
|                | Kadapa         | DIC Office,Kadapa   | 10                                   | 42                          | 23             | 54                      | 0               | 7                  |
|                |                | Rajiv Gandhi Institute of Medical Sciences                                    | 8                                    | 69                          | 24             | 70                      | 1               | 11                 |
|                |                | Office Building Ramanayyapeta   | 6                                    | 107                         | 30             | 55                      | 6               | 23                 |
|                | Kakinada       | Gram Panchayathi building, Suryaraopeta                                       | 6                                    | 30                          | 15             | 28                      | 0               | 6                  |
|                |                | MEE Seva / MEPMA Office, Sailipeta  | 6                                    | 59                          | 16             | 41                      | 0               | 11                 |
|                |                | Petro Chemical Engineering Block, JNTU , Pithapuram Road                      | 6                                    | 53                          | 18             | 41                      | 0               | 10                 |
|                |                | Mourya Inn, Krishna Nagar   | 9                                    | 55                          | 25             | 57                      | 0               | 11                 |
|                | Kurnool        | APIIC Building Industrial estate, Kallur at IDA Bobbili Growth Center         | 13                                   | 58                          | 34             | 42                      | 0               | 11                 |
|                |                | Rajvihar Circle   | 17                                   | 56                          | 34             | 68                      | 0               | 10                 |
|                |                | Pump House, Venkataramana Colony  | 10                                   | 41                          | 25             | 63                      | 0               | 8                  |
|                |                | Venkatareddy Nagar, Vedayapalem   | 27                                   | 38                          | 33             | 77                      | 0               | 3                  |
|                | Nellore        | Chandramouli nagar  | 26                                   | 37                          | 32             | 36                      | 0               | 2                  |
|                |                | Near Court Center   | 8                                    | 40                          | 25             | 35                      | 0               | 7                  |
|                | Ongole         | APIIC, Administrative Office, Growth Centre, Gundlapalli                      | 15                                   | 34                          |                | 12                      | 0               | 6                  |
|                |                | Ongole Municipal Corporation  | 8                                    | 35                          | 24             | 34                      | 0               | 8                  |
|                |                | Rajahmundry/ Rajamahendravaram  | Staff Clud Building, A.P. Paper Mill | 8                           | 118            | 34                      | 70              | 11                 |
|                | Srikakulam     | SAMKRG Pistons Quarters Bulding, Near IDA, Pydibhimavaram                     | 10                                   | 95                          | 36             | 64                      | 2               | 16                 |
|                |                | Regional Science Centre, Chittoor Bypass                                      | 19                                   | 31                          |                | 10                      | 0               | 4                  |
|                | Tirupati       | Municipal Office, Tilak Road  | 9                                    | 38                          | 26             | 44                      | 0               | 7                  |
|                |                | Sri Venkateswara Guest House (TTD SV Rest House), Near APSRTC Bus Stand       | 18                                   | 46                          | 31             | 46                      | 0               | 7                  |
|                |                | Benz Circle   | 15                                   | 43                          | 25             | 90                      | 0               | 4                  |
|                | Vijaywada      | Autonagar   | 20                                   | 40                          | 27             | 81                      | 0               | 3                  |
|                |                | Police Control Room   | 18                                   | 43                          | 28             | 90                      | 0               | 3                  |
|                |                | Industrial Estate, Marripalem   | 8                                    | 80                          | 36             | 64                      | 9               | 18                 |
|                | Vishakhapatnam | Panchayat Raj office, Mindi   | 9                                    | 75                          | 27             | 68                      | 2               | 12                 |
|                |                | Police Barracks   | 7                                    | 99                          | 36             | 89                      | 8               | 19                 |
|                |                | INS-Virabahu, Naval Area  | 7                                    | 49                          | 27             | 55                      | 0               | 11                 |
|                |                | Seethammadhara  | 8                                    | 91                          | 29             | 80                      | 1               | 13                 |
|                |                | Ganapuram Area  | 10                                   | 127                         | 41             | 77                      | 11              | 22                 |
|                |                | Pedagantyada (V), Gajuwada (M)  | 7                                    | 70                          | 34             | 77                      | 3               | 15                 |
|                |                | CWMP, RAMKY, Parawada   | 10                                   | 73                          | 32             | 54                      | 5               | 16                 |
|                |                | MVP Raitu Bajar   | 8                                    | 84                          |                | 4                       | 1               | 35                 |
|                |                | Industrial Growth Centre, APIIC Building at IDA Bobbili                       | 8                                    | 58                          | 35             | 50                      | 0               | 13                 |

Annexure 6: Location wise PM<sub>2.5</sub> - 2019

| State                                | City                           | Location  | Concentration in µg/m <sup>3</sup> |                             |                | No. of days in the year |                 | Standard deviation |
|--------------------------------------|--------------------------------|---|------------------------------------|-----------------------------|----------------|-------------------------|-----------------|--------------------|
|                                      |                                |   | Minimum (24-hourly average)        | Maximum (24-hourly average) | Annual Average | Monitored               | Exceeding NAAQs |                    |
| Assam                                | Guwahati                       | Head Office, Bamunimaidam   | 12                                 | 51                          | 27             | 24                      | 0               | 10                 |
|                                      |                                | ITI Building, Gopinath Nagar  | 17                                 | 51                          | 30             | 25                      | 0               | 8                  |
|                                      |                                | Khanapara, Central Dairy, Kamrup  | 10                                 | 43                          | 23             | 21                      | 0               | 9                  |
| Bihar                                | Begusarai                      | Begusarai   | 19                                 | 114                         | 55             | 104                     | 36              | 21                 |
|                                      | Muzaffarpur                    | BSPCB Regional Office, Bela Industrial Area, Bela                                 | 19                                 | 304                         | 101            | 104                     | 65              | 72                 |
| Chandigarh                           | Chandigarh                     | Modern Foods, Industrial Area   | 11                                 | 323                         | 74             | 124                     | 61              | 51                 |
|                                      |                                | Sector-17 C   | 10                                 | 149                         | 59             | 90                      | 35              | 32                 |
|                                      |                                | Punjab Engineering College, Sector- 12  | 17                                 | 180                         | 63             | 115                     | 51              | 37                 |
|                                      |                                | Sector-39, IMTECH   | 13                                 | 199                         | 64             | 126                     | 53              | 37                 |
|                                      |                                | Kaimbwala Village   | 7                                  | 165                         | 56             | 127                     | 44              | 33                 |
| Chhattisgarh                         | Durg-Bhillainagar              | Regional Office, CECB Vyapar Vihar  | 13                                 | 38                          | 27             | 91                      | 0               | 4                  |
|                                      |                                | Visak Hostel, Sector-4  | 28                                 | 50                          | 39             | 69                      | 0               | 6                  |
|                                      |                                | R.O., 5/32 Banglow Office Building  | 20                                 | 40                          | 29             | 72                      | 0               | 5                  |
|                                      |                                | M.P. Laghu Udyog Nigam  | 33                                 | 61                          | 52             | 75                      | 1               | 5                  |
|                                      |                                | CSIDC Industrial Growth Center, Borai, Durg                                       | 37                                 | 61                          | 48             | 74                      | 1               | 7                  |
|                                      | Korba                          | HIG 21,22.Near Ghantaghar, MP Extension   | 13                                 | 46                          | 30             | 97                      | 0               | 11                 |
|                                      |                                | Pragati Nagar NTPC Colony, Jamnipali  | 12                                 | 46                          | 27             | 99                      | 0               | 10                 |
|                                      |                                | I.T.I., Rampur  | 15                                 | 49                          | 32             | 100                     | 0               | 11                 |
|                                      | Raigarh                        | Regional Office, ECB, Raigarh   | 10                                 | 34                          | 20             | 78                      | 0               | 4                  |
|                                      |                                | Jindal Industrial Area,Punjipathra, Raigarh                                       | 15                                 | 40                          | 28             | 72                      | 0               | 6                  |
|                                      |                                | OP Jindal School premises Patrapali   | 8                                  | 32                          | 22             | 64                      | 0               | 5                  |
| Dadra & Nagar Haveli and Daman & Diu | Baldevi (Dadra & Nagar Haveli) | Baldevi Village, Athola, Dandul Faliya, Teh:Dadra & Nagar Haveli                  | 10                                 | 43                          | 25             | 97                      | 0               | 10                 |
|                                      |                                | Khadoli Industrial Area, Khadoli  | 20                                 | 59                          | 39             | 99                      | 0               | 12                 |
|                                      | Silvassa                       | Chetan Guest House, Near Post Office, Piperia, silvassa Char Rasta                | 17                                 | 60                          | 40             | 100                     | 0               | 13                 |
|                                      |                                | Prima Plastic, Kadaiya Industrial Area, Kadaiya                                   | 12                                 | 59                          | 38             | 97                      | 0               | 13                 |
|                                      | Daman                          | Mashal Chawk, Nani Daman  | 11                                 | 57                          | 34             | 99                      | 0               | 14                 |
|                                      |                                | Makat Faliya/ Ambavadi, Patlara Village, Moti Daman Teh:Daman                     | 10                                 | 39                          | 23             | 100                     | 0               | 8                  |
|                                      | Delhi                          | Janakpuri   | 15                                 | 513                         | 108            | 120                     | 72              | 90                 |
|                                      |                                | Naraina Industrial Area, Delhi  | 13                                 | 339                         | 79             | 92                      | 51              | 63                 |
|                                      |                                | Pritampura  | 11                                 | 590                         | 128            | 110                     | 79              | 108                |
| Goa                                  | Amona                          | Amona, Bicholim   | 16                                 | 120                         | 38             | 105                     | 18              | 21                 |
|                                      | Assanora                       | Assanora Junction, Bardez   | 13                                 | 61                          | 30             | 104                     | 1               | 11                 |
|                                      | Bicholim                       | Bicholim  | 12                                 | 63                          | 31             | 103                     | 3               | 13                 |
|                                      | Codli                          | Codli Tisk, Ponda, Sanguem  | 14                                 | 81                          | 32             | 103                     | 7               | 16                 |
|                                      | Cuncolim                       | Cuncolim  | 15                                 | 77                          | 38             | 102                     | 13              | 17                 |
|                                      | Honda                          | Honda Junction, Sattari   | 15                                 | 69                          | 32             | 104                     | 7               | 14                 |
|                                      | Kundaim                        | Kundaim Industrial Estate   | 12                                 | 83                          | 31             | 104                     | 8               | 15                 |
|                                      | Margao                         | Margao Town   | 15                                 | 78                          | 30             | 102                     | 7               | 14                 |
|                                      | Panaji                         | Old GSPCB premises, Patto   | 4                                  | 166                         | 50             | 60                      | 15              | 29                 |
|                                      | Ponda                          | Ponda Town  | 16                                 | 85                          | 33             | 105                     | 9               | 16                 |
|                                      | Sanguem                        | Near Railway Station at Kalem, Sanguem  | 15                                 | 68                          | 29             | 103                     | 3               | 12                 |
|                                      | Tilamol                        | Quepem, Tilamol   | 15                                 | 90                          | 35             | 102                     | 9               | 16                 |
|                                      | Tuem                           | Tuem Industrial Estate  | 14                                 | 68                          | 29             | 104                     | 3               | 11                 |
|                                      | Usgao                          | Usgao Plae, Junction, Ponda   | 17                                 | 99                          | 33             | 96                      | 3               | 13                 |
|                                      | Vasco                          | Fuse Call Office, Mormugao  | 5                                  | 114                         | 41             | 53                      | 8               | 24                 |
| Gujarat                              | Ahmedabad                      | Naroda, G.I.D.C., Ahmadabad   | 18                                 | 102                         | 38             | 87                      | 18              | 22                 |
|                                      |                                | Cadilla Bridge Narol  | 16                                 | 130                         | 40             | 86                      | 16              | 29                 |
|                                      |                                | Bhagavathi Estate, Keval Kanta Road, Rakhiyal                                     | 16                                 | 98                          | 36             | 88                      | 15              | 22                 |
|                                      |                                | Reliable Products, 61/62 Ilaben estate,Piranadump Site,Narol (previous Dyno Wash) | 21                                 | 130                         | 44             | 87                      | 15              | 27                 |
|                                      |                                | L.D. Engg. College  | 16                                 | 103                         | 35             | 88                      | 17              | 23                 |
|                                      |                                | Shardaben Hospital, Saraspur  | 16                                 | 113                         | 35             | 86                      | 12              | 24                 |
|                                      |                                | R.C. Technical High School, Mirzapur  | 16                                 | 93                          | 33             | 86                      | 12              | 21                 |
|                                      |                                | AZL Behrampura, Ahmadabad   | 16                                 | 108                         | 36             | 87                      | 16              | 24                 |
|                                      |                                | Sola L.T. Chanakyapur Pumping Station   | 18                                 | 112                         | 37             | 88                      | 13              | 27                 |
|                                      |                                | Anklesvar   | 21                                 | 70                          | 37             | 88                      | 7               | 12                 |

Annexure 6: Location wise PM<sub>2.5</sub> - 2019

| State            | City          | Location   | Concentration in µg/m <sup>3</sup> |                             |                | No. of days in the year |                 | Standard deviation |
|------------------|---------------|--|------------------------------------|-----------------------------|----------------|-------------------------|-----------------|--------------------|
|                  |               |  | Minimum (24-hourly average)        | Maximum (24-hourly average) | Annual Average | Monitored               | Exceeding NAAQs |                    |
| Gujarat          |               | Durga Traders, Bhavanafarm Society                 | 21                                 | 67                          | 35             | 88                      | 4               | 11                 |
|                  | Jamnagar      | Fisheries Office                                   | 14                                 | 85                          | 34             | 87                      | 12              | 18                 |
|                  | Rajkot        | Nr. Sardhara Industrial Corporation                | 16                                 | 83                          | 35             | 87                      | 10              | 16                 |
|                  |               | GPCB Regional Office                               | 14                                 | 98                          | 35             | 87                      | 11              | 19                 |
|                  | Surat         | S.V.R. Engg. College                               | 16                                 | 57                          | 33             | 87                      | 0               | 9                  |
|                  |               | B.R.C. High School, Udhna                          | 18                                 | 109                         | 46             | 83                      | 15              | 23                 |
|                  |               | Near Air India Office                              | 13                                 | 104                         | 41             | 88                      | 13              | 20                 |
|                  | Vadodara      | GPCB Office, Geri Vasahat                          | 17                                 | 86                          | 34             | 87                      | 12              | 17                 |
|                  |               | Sterling Gelatin Guest House, Vill-Karakhadi Padia | 17                                 | 108                         | 40             | 87                      | 16              | 25                 |
|                  |               | Dandia Bazaar                                      | 17                                 | 89                          | 34             | 88                      | 10              | 17                 |
|                  |               | CETP Nandesari                                     | 18                                 | 112                         | 41             | 85                      | 0               | 26                 |
|                  |               | Lubrizol   | 17                                 | 94                          | 36             | 87                      | 11              | 19                 |
| Himachal Pradesh | Vapi          | GEB, IIrd Phase, GIDC                              | 17                                 | 98                          | 45             | 86                      | 18              | 22                 |
|                  |               | Vapi Nagar Palika, Vapi                            | 12                                 | 89                          | 35             | 87                      | 10              | 18                 |
|                  | Damtal        | Regional Office                                    | 6                                  | 43                          | 19             | 99                      | 0               | 7                  |
|                  |               | Old Road   | 7                                  | 52                          | 22             | 97                      | 0               | 10                 |
|                  | Dharamshala   | Kotwali Bazar Dharamshala                          | 8                                  | 25                          | 14             | 29                      | 0               | 4                  |
|                  |               | Daari, Dharamshala                                 | 7                                  | 82                          | 17             | 118                     | 1               | 8                  |
|                  | Kala Amb      | Kala Amb Industrial Area                           | 70                                 | 113                         | 85             | 19                      | 19              | 11                 |
|                  |               | Kala Amb Town/Trilokpur                            | 14                                 | 79                          | 52             | 29                      | 10              | 15                 |
|                  | Manali        | Nehru Park, Manali, Kullu                          | 1                                  | 76                          | 27             | 118                     | 3               | 11                 |
|                  |               | HPSPCB, Hadimba Road, Manali, Kullu                | 7                                  | 31                          | 17             | 31                      | 0               | 6                  |
|                  | Paonta Sahib  | Paonta Sahib                                       | 8                                  | 63                          | 39             | 49                      | 2               | 15                 |
|                  |               | Regional Office, Sector- 4                         | 6                                  | 56                          | 18             | 140                     | 0               | 8                  |
| Jammu & Kashmir  | Parwanoo      | Asst. Commissioner Building Sector I               | 6                                  | 56                          | 19             | 108                     | 0               | 8                  |
|                  |               | Shimla   | 5                                  | 56                          | 26             | 118                     | 0               | 9                  |
|                  | Sunder Nagar  | HPSPCB, BBMB Colony, Mandi                         | 6                                  | 75                          | 30             | 47                      | 2               | 16                 |
|                  |               | Municipal Council, NH-21, Mandi                    | 18                                 | 86                          | 46             | 24                      | 5               | 17                 |
|                  | Jammu         | Regional Office, Jammu                             | 12                                 | 63                          |                | 27                      | 1               | 15                 |
|                  |               | M.A. Stadium, Jewel Chowk                          | 16                                 | 56                          | 39             | 20                      | 0               | 11                 |
|                  |               | Bari Brahma Industrial Area                        | 12                                 | 49                          | 35             | 26                      | 0               | 10                 |
| Karnataka        | Bagalkote     | Bagalkote KSPCB Office Premises                    | 10                                 | 68                          | 29             | 40                      | 2               | 14                 |
|                  |               | Graphite India, White Field Road                   | 12                                 | 70                          | 32             | 72                      | 1               | 12                 |
|                  | Bangalore     | AMCO Batteries, Mysore Road                        | 16                                 | 74                          | 36             | 96                      | 3               | 12                 |
|                  |               | KHB Industrial Area, Yelahanka                     | 11                                 | 47                          | 27             | 28                      | 0               | 10                 |
|                  |               | Peenya Industrial Area                             | 17                                 | 57                          | 36             | 13                      | 0               | 15                 |
|                  |               | Victoria hospital                                  | 11                                 | 59                          | 23             | 71                      | 0               | 8                  |
|                  |               | Yeshwanthpura police station                       | 10                                 | 74                          | 35             | 88                      | 3               | 14                 |
|                  |               | Jnanabharathi, Bangalore University                | 20                                 | 55                          | 40             | 20                      | 0               | 9                  |
|                  |               | TERI office, Vital Medi healthcare Pvt Ltd         | 11                                 | 67                          | 30             | 79                      | 1               | 12                 |
|                  | Belgaum       | Karnataka SPCB Office Building                     | 7                                  | 90                          | 38             | 50                      | 9               | 21                 |
|                  |               | KSPCB Office Premises                              | 5                                  | 89                          | 39             | 51                      | 9               | 22                 |
|                  | Bidar         | KSPCB Office Premises                              | 15                                 | 76                          |                | 16                      | 2               | 18                 |
|                  |               | Devanagere   | 3                                  | 35                          | 16             | 85                      | 0               | 9                  |
|                  | Gulburga      | Regional Office building, KSPCB                    | 23                                 | 102                         | 46             | 35                      | 9               | 18                 |
|                  |               | Government Hospital                                | 18                                 | 36                          | 25             | 78                      | 0               | 4                  |
|                  | Hassan        | KSRTC bus stand building                           | 12                                 | 33                          | 20             | 105                     | 0               | 4                  |
|                  |               | Lakkamanahalli Industrial Area, Dharwad            | 15                                 | 38                          | 24             | 104                     | 0               | 5                  |
|                  | Hubli-Dharwad | Rani Chennamma Circle, Hubli                       | 12                                 | 53                          | 28             | 31                      | 0               | 10                 |
|                  |               | Kolar  | 15                                 | 59                          |                | 14                      | 0               | 13                 |
|                  | Mangalore     | Baikampady Industrial Area                         | 18                                 | 41                          | 26             | 108                     | 0               | 4                  |
|                  |               | Mysore   | 1                                  | 34                          | 14             | 43                      | 0               | 9                  |
|                  | Raichur       | KSPCB Office Premises, Raichur                     | 3                                  | 24                          | 12             | 62                      | 0               | 5                  |
|                  |               | Shimoga  | The VISL, Oxygen Plant, Shimoga    |                             |                |                         |                 |                    |
| Kerala           | Kochi         | Kuttipadam   | 4                                  | 61                          | 32             | 43                      | 2               | 17                 |
|                  |               | Kozhikode City                                     | 2                                  | 38                          | 13             | 85                      | 0               | 8                  |
|                  | Kozhikode     | Nallalam   | 1                                  | 56                          | 14             | 87                      | 0               | 11                 |

Annexure 6: Location wise PM<sub>2.5</sub> - 2019

| State          | City            | Location   | Concentration in µg/m <sup>3</sup> |                                   |                   | No. of days in the year |                    | Standard deviation |
|----------------|-----------------|--|------------------------------------|-----------------------------------|-------------------|-------------------------|--------------------|--------------------|
|                |                 |  | Minimum<br>(24-hourly<br>average)  | Maximum<br>(24-hourly<br>average) | Annual<br>Average | Monitored               | Exceeding<br>NAAQs |                    |
| Madhya Pradesh | Bhopal          | Hamidia Road, MP Hastshilp Vikas Nigam                               | 35                                 | 119                               |                   | 13                      | 10                 | 30                 |
|                |                 | CETP Govindpura  | 25                                 | 56                                |                   | 7                       | 0                  | 12                 |
|                |                 | Kolar Thana, Kolar Road, Bhopal                                      | 39                                 | 122                               |                   | 14                      | 10                 | 29                 |
|                |                 | AKVN Office, Industrial Area Mandideep, Raisen                       | 37                                 | 125                               |                   | 12                      | 10                 | 29                 |
|                |                 | Barkatullah University, Hoshgabad Road, Bhopal                       | 25                                 | 86                                |                   | 16                      | 9                  | 23                 |
|                |                 | Arera Colony   | 12                                 | 80                                | 48                | 40                      | 12                 | 18                 |
|                | Chhindwara      | HIG -33, Front of Geetanali Park Housing Board Colony, Chadagaon     | 12                                 | 60                                | 34                | 96                      | 0                  | 12                 |
|                |                 | Hindustan Unileaver, Narsinghpur Road,                               | 12                                 | 60                                | 37                | 88                      | 0                  | 11                 |
|                | Dewas           | EID Perry (I) Limited  | 25                                 | 59                                | 47                | 24                      | 16                 | 11                 |
|                |                 | Dewas Metal Section  | 30                                 | 58                                | 45                | 26                      | 18                 | 8                  |
|                |                 | Vikas Nagar  | 25                                 | 86                                | 46                | 41                      | 27                 | 12                 |
|                | Gwalior         | Dindayal Nagar   | 13                                 | 175                               | 57                | 89                      | 43                 | 21                 |
|                |                 | Maharaj Bada   | 19                                 | 91                                | 58                | 93                      | 51                 | 17                 |
|                | Indore          | M.P. Laghu Udyog, Pologround   | 13                                 | 68                                | 39                | 94                      | 3                  | 12                 |
|                |                 | Kothari Market, M.G. Road  | 11                                 | 63                                | 37                | 101                     | 2                  | 12                 |
|                |                 | Telephone Nagar, 26 A, Kanadia Road                                  | 12                                 | 64                                | 36                | 99                      | 4                  | 10                 |
|                | Katni           | HIG-4 Housing Board Colony Jhinjhri, Katni                           | 20                                 | 37                                |                   | 2                       | 0                  | 12                 |
|                |                 | Calderys Works Refactories India Private Limited, Guest House, Katni | 26                                 | 26                                |                   | 1                       | 0                  |                    |
|                | Nagda           | Chem. D. Labour Club   | 25                                 | 38                                | 30                | 15                      | 0                  | 4                  |
|                |                 | Grasim Kalyan Kendra   | 30                                 | 48                                | 41                | 22                      | 14                 | 6                  |
|                | Prithampur      | Vikas Bhavan, Sector-2   | 17                                 | 45                                | 32                | 76                      | 0                  | 7                  |
|                |                 | RCC Over Head Tank No. 1, Sector-3                                   | 17                                 | 65                                | 33                | 80                      | 1                  | 8                  |
|                | Sagar           | Pt.Deendayal Nagar   | 6                                  | 44                                | 19                | 25                      | 0                  | 8                  |
|                |                 | Katra Bazar, Sagar   | 10                                 | 32                                | 19                | 26                      | 0                  | 5                  |
|                | Singrauli       | Jayant Township  | 12                                 | 165                               | 68                | 37                      | 23                 | 39                 |
|                |                 | N.T.P.C., Vidyanagar   | 13                                 | 222                               | 69                | 35                      | 19                 | 39                 |
|                |                 | Waidhan  | 8                                  | 143                               | 63                | 40                      | 21                 | 36                 |
|                | Ujjain          | Regional Office  | 13                                 | 70                                |                   | 5                       | 1                  | 25                 |
|                |                 | Chamunda Mata Chouraha   | 25                                 | 46                                |                   | 2                       | 1                  | 15                 |
| Maharashtra    | Mumbai          | Worli  | 4                                  | 174                               | 40                | 94                      | 17                 | 29                 |
|                | Nagpur          | NEERI Lab, Nehru Marg, Highway No. 7                                 | 5                                  | 84                                | 39                | 78                      | 12                 | 20                 |
| Manipur        | Imphal          | Secretariat Building   | 37                                 | 71                                |                   | 6                       | 0                  | 13                 |
| Meghalaya      | Byrnihat        | EPIP, Ri-Bhoi district   | 3                                  | 10                                | 7                 | 36                      | 0                  | 2                  |
|                | Dawki           | Terrace building, Jaintia Hills District                             | 3                                  | 10                                | 7                 | 36                      | 0                  | 2                  |
|                | Khliehriat      | O/o BDO, C & R.D. Block-Khliehriat                                   | 3                                  | 10                                | 7                 | 36                      | 0                  | 2                  |
|                | Nongstoin       | Office Premises of E.E, PHED   | 3                                  | 10                                | 7                 | 36                      | 0                  | 2                  |
|                | Shillong        | Boards Office Permisess, Lumpyngngad                                 | 3                                  | 17                                | 9                 | 106                     | 0                  | 3                  |
|                |                 | State Tuberculosis Hospital  | 3                                  | 10                                | 7                 | 36                      | 0                  | 2                  |
|                |                 | Forest Rest House, Polo Hills  | 3                                  | 10                                | 7                 | 36                      | 0                  | 2                  |
|                |                 | 41/2 mile, Mylliem Range Office                                      | 3                                  | 10                                | 7                 | 36                      | 0                  | 2                  |
|                | Tura            | PHED, Araisimille, West Garo Hills District                          | 3                                  | 10                                | 7                 | 36                      | 0                  | 2                  |
|                | Umiam / Umsning | Umiam Industrial Complex, Ri-Bhoi District                           | 3                                  | 10                                | 7                 | 36                      | 0                  | 2                  |
| Odisha         | Angul           | Industrial Estate  | 21                                 | 87                                | 55                | 102                     | 39                 | 14                 |
|                |                 | NALCO Township   | 15                                 | 64                                | 40                | 102                     | 4                  | 11                 |
|                | Balasore        | Sahadevkhunta  | 30                                 | 62                                | 45                | 103                     | 1                  | 8                  |
|                |                 | DIC office   | 30                                 | 70                                | 44                | 104                     | 1                  | 8                  |
|                |                 | Rasalpur near Balgopalpur I/A  | 34                                 | 75                                | 50                | 105                     | 5                  | 7                  |
|                |                 | Regional Office Orissa SPCB  | 13                                 | 70                                | 26                | 107                     | 1                  | 9                  |
|                | Berhampur       | Capital Police Station   | 16                                 | 37                                | 30                | 49                      | 0                  | 5                  |
|                |                 | IRC Village  | 10                                 | 129                               | 28                | 76                      | 6                  | 19                 |
|                | Bhubneshwar     | Office Premises Bhubaneswar  | 14                                 | 110                               | 30                | 46                      | 2                  | 18                 |

Annexure 6: Location wise PM<sub>2.5</sub> - 2019

| State     | City       | Location   | Concentration in µg/m <sup>3</sup> |                             |                | No. of days in the year |                 | Standard deviation |
|-----------|------------|--|------------------------------------|-----------------------------|----------------|-------------------------|-----------------|--------------------|
|           |            |  | Minimum (24-hourly average)        | Maximum (24-hourly average) | Annual Average | Monitored               | Exceeding NAAQs |                    |
| Orissa    |            | Water works, Palasuni, Rasalgarh                             | 7                                  | 76                          | 30             | 70                      | 1               | 12                 |
|           |            | Patrapara, Khandagiri  | 14                                 | 56                          | 30             | 46                      | 0               | 13                 |
|           |            | Chandrashekhpur  | 12                                 | 83                          | 28             | 61                      | 1               | 12                 |
|           | Bonaigarh  | Govt. Hospital Bonai At/Po/PS-Bonai Dist-Sudargarh           | 24                                 | 89                          | 51             | 104                     | 0               | 14                 |
|           | Cuttack    | Traffic Tower, Badambadi                                     | 18                                 | 97                          | 40             | 54                      | 1               | 13                 |
|           |            | P.H.D Office Barabati  | 25                                 | 113                         | 50             | 54                      | 14              | 24                 |
|           | Jharsuguda | R.O. Cuttack Office, Surya Vihar                             | 24                                 | 106                         | 50             | 94                      | 23              | 22                 |
|           |            | R.O. Building Cox colony                                     | 35                                 | 93                          | 51             | 108                     | 21              | 10                 |
|           |            | TRL Colony, M/S. TRL Krosaki Refractories Ltd. PO: Bhepahar, | 29                                 | 71                          | 39             | 106                     | 1               | 7                  |
|           |            | Paradeep   | 23                                 | 169                         | 55             | 76                      | 14              | 39                 |
|           |            | Puri   | 12                                 | 91                          |                | 38                      | 1               | 13                 |
|           | Rajgangpur | DISIR, Rajgangpur  | 31                                 | 93                          | 58             | 103                     | 39              | 15                 |
|           |            | Regional Office Orissa SPCB                                  | 10                                 | 91                          | 32             | 104                     | 2               | 14                 |
|           |            | LPS High School, Jaykaypur                                   | 9                                  | 66                          | 35             | 101                     | 2               | 14                 |
|           | Rayagada   | Regional Office, ORPB  | 20                                 | 88                          | 37             | 104                     | 2               | 7                  |
|           |            | Kalunga Industrial Estate                                    | 17                                 | 79                          | 47             | 104                     | 29              | 16                 |
|           |            | IDL Police Out-post, Sonaparbat                              | 40                                 | 93                          | 51             | 104                     | 10              | 8                  |
|           |            | Kuarmunda, Sundergarh  | 22                                 | 93                          | 53             | 104                     | 38              | 14                 |
|           | Sambalpur  | Filter Plant, PHD Office, Modipara                           | 19                                 | 164                         | 48             | 105                     | 17              | 20                 |
|           | Talcher    | Coal Field Area  | 19                                 | 93                          | 49             | 104                     | 34              | 20                 |
|           |            | T.T.P.S.Colony   | 12                                 | 125                         | 44             | 104                     | 24              | 23                 |
| Tamilnadu | Chennai    | Govt. High School, Manali                                    | 26                                 | 52                          | 36             | 30                      | 0               | 6                  |
|           |            | Kathivakkam  | 20                                 | 45                          | 33             | 28                      | 0               | 6                  |
|           |            | Thiruvottiyur  | 25                                 | 48                          | 35             | 30                      | 0               | 5                  |
|           |            | NEERI, CSIR CampusTaramani                                   | 10                                 | 76                          | 29             | 85                      | 1               | 11                 |
|           |            | Kilpauk  | 17                                 | 57                          | 38             | 34                      | 0               | 11                 |
|           |            | Thiyagaraya Nagar  | 15                                 | 59                          | 42             | 27                      | 0               | 12                 |
|           |            | Anna Nagar   | 25                                 | 52                          | 39             | 23                      | 0               | 8                  |
|           | Coimbatore | Poniarajapuram, On the top of DEL                            | 9                                  | 50                          | 28             | 29                      | 0               | 11                 |
|           |            | G.D.Matric Hr.Sec.School                                     | 10                                 | 122                         | 42             | 20                      | 2               | 23                 |
|           |            | SIDCO Office, Coimbatore/ Kurichi                            | 12                                 | 79                          | 42             | 32                      | 3               | 16                 |
|           | Cuddalore  | Eachangadu Village   | 27                                 | 35                          | 32             | 40                      | 0               | 2                  |
|           |            | SIPCOT (Project Office)                                      | 24                                 | 33                          | 29             | 38                      | 0               | 2                  |
|           |            | DEE Office, Cuddalore  | 32                                 | 38                          | 35             | 34                      | 0               | 2                  |
|           | Madurai    | Highway (Project -I) Building                                | 12                                 | 62                          |                | 16                      | 1               | 11                 |
|           |            | Fenner (I) Ltd. Kochadai                                     | 18                                 | 36                          |                | 15                      | 0               | 5                  |
|           |            | Kunnathur Chatram Avvai Girls HS School                      | 15                                 | 49                          |                | 15                      | 0               | 9                  |
|           | Mettur     | Raman Nagar  | 15                                 | 48                          |                | 14                      | 0               | 11                 |
|           |            | SIDCO  | 21                                 | 71                          |                | 16                      | 2               | 15                 |
|           | Salem      | Sowdeswari College Building                                  | 13                                 | 80                          |                | 14                      | 2               | 18                 |
|           | Trichy     | Gandhi Market  | 46                                 | 82                          | 57             | 30                      | 10              | 8                  |
|           |            | Main Guard Gate  | 32                                 | 67                          | 57             | 32                      | 15              | 8                  |
|           |            | Bishop Heber College   | 22                                 | 43                          | 31             | 37                      | 0               | 5                  |
|           |            | Golden Rock  | 20                                 | 43                          | 29             | 33                      | 0               | 5                  |
|           |            | Central Bus Stand  | 19                                 | 67                          | 54             | 35                      | 12              | 11                 |
|           |            | Fisheries College, Tuticorin Sipcot                          | 14                                 | 36                          | 22             | 32                      | 0               | 5                  |
|           |            | Raja Agencies  | 13                                 | 43                          | 25             | 27                      | 0               | 5                  |
|           | Tuticorin  | AVM Jewellery Building                                       | 13                                 | 44                          | 22             | 36                      | 0               | 6                  |
| Telangana | Adilabad   | Building of SCCL Manadamarri Club Mandamarri, Mancherial     | 40                                 | 50                          | 45             | 90                      | 0               | 3                  |
|           | Hyderabad  | Balanagar  | 13                                 | 74                          | 35             | 45                      | 4               | 16                 |
|           |            | Tarnaka, NEERI Lab. IICT Campus                              | 14                                 | 110                         | 55             | 81                      | 34              | 25                 |
|           |            | Uppal, Modern Foods & Industries IDA                         | 13                                 | 67                          | 30             | 45                      | 2               | 13                 |
|           |            | Jubilee Hills  | 11                                 | 69                          | 30             | 43                      | 2               | 15                 |
|           |            | Paradise   | 4                                  | 80                          | 41             | 83                      | 9               | 16                 |
|           |            | Charminar  | 9                                  | 70                          | 33             | 92                      | 2               | 15                 |
|           |            | Zoo Park   | 7                                  | 148                         | 55             | 102                     | 40              | 33                 |
|           |            | Jeedimetla Industrial Estate, Rangareddy Distt.              | 13                                 | 78                          | 42             | 67                      | 10              | 18                 |
|           | Khammam    | CER Club Khammam   | 34                                 | 56                          | 45             | 24                      | 0               | 7                  |
|           | Nalgonda   | AP PCB Nalgonda  | 28                                 | 47                          |                | 16                      | 0               | 6                  |
|           | Nizamabad  | subashnagar,nizamabad dist                                   | 33                                 | 46                          | 41             | 45                      | 0               | 3                  |

Annexure 6: Location wise PM<sub>2.5</sub> - 2019

| State          | City          | Location  | Concentration in µg/m <sup>3</sup> |                             |                | No. of days in the year |                 | Standard deviation |
|----------------|---------------|---|------------------------------------|-----------------------------|----------------|-------------------------|-----------------|--------------------|
|                |               |   | Minimum (24-hourly average)        | Maximum (24-hourly average) | Annual Average | Monitored               | Exceeding NAAQS |                    |
| Andhra Pradesh | Patencheru    | Police Station, Medak, Ramachadrapuram                              | 21                                 | 56                          | 41             | 58                      | 0               | 8                  |
|                |               | Pashamylaram/Municipal Office                                       | 4                                  | 131                         | 45             | 107                     | 28              | 30                 |
|                | Sangareddy    | Regional office Building of SANGAREDDY                              | 21                                 | 53                          | 40             | 53                      | 0               | 7                  |
|                |               | M/s. Mylan Industries, Gaddapothara                                 | 30                                 | 58                          | 46             | 47                      | 0               | 7                  |
| Tripura        | Warangal      | Mee-Seva Building ,Municipal Complex                                | 32                                 | 36                          |                | 2                       | 0               | 3                  |
|                |               | SPCB, Pavivesh Bhawan, Pandit Nehru Complex, Gorkhabasti, Kunjaban  | 13                                 | 29                          | 24             | 83                      | 0               | 3                  |
|                | Agartala      | Bordowali Bipani Bitan, Agartala MC, Bordowali, Near Nagerjala      | 45                                 | 69                          | 61             | 83                      | 59              | 4                  |
|                |               | Regional Office, Bodla  | 21                                 | 199                         | 102            | 26                      | 15              | 65                 |
| Uttar Pradesh  | Agra          | Nunhai  | 30                                 | 338                         | 160            | 25                      | 21              | 81                 |
|                |               | Taj Mahal   | 6                                  | 405                         | 91             | 244                     | 138             | 73                 |
|                |               | DIC Nunhai  | 10                                 | 350                         | 94             | 82                      | 49              | 69                 |
|                |               | Etmad-uddaulah  | 26                                 | 394                         | 135            | 73                      | 60              | 89                 |
|                |               | Rambagh   | 14                                 | 300                         | 76             | 80                      | 38              | 57                 |
|                |               | Sarvodaya Hospital, Tatiri Merrut, Baghpat Road                     | 42                                 | 261                         | 91             | 97                      | 88              | 37                 |
|                | Baghpat       | Weavetex Overseas Hostel, Khekra, Baghpat                           | 42                                 | 265                         | 93             | 97                      | 90              | 40                 |
|                |               | IVRI Izatnaga   | 24                                 | 32                          |                | 18                      | 0               | 3                  |
|                | Bareily       | Indian oetrol pump, Civil Line                                      | 24                                 | 32                          |                | 18                      | 0               | 3                  |
|                |               | Atlas Cycles Industries, Sahibabad Ind. area                        | 15                                 | 457                         | 102            | 79                      | 49              | 89                 |
|                | Ghaziabad     | Bulandshaar Road Industrial Area                                    | 1                                  | 430                         | 105            | 80                      | 48              | 91                 |
|                |               | Khora Colony, Ghaziabad   | 47                                 | 283                         | 95             | 97                      | 84              | 44                 |
|                |               | Vinoba Bhave Park, Lohia Nagar, Ghaziabad                           | 58                                 | 292                         |                | 41                      | 38              | 48                 |
|                |               | Holland Tractor, Greater Noida                                      | 48                                 | 281                         | 94             | 95                      | 83              | 42                 |
|                | Greater Noida | Honda Power, Greater Noida  | 49                                 | 293                         | 95             | 97                      | 86              | 42                 |
|                |               | Srinagar Colony, Railway Road, Hapur                                | 17                                 | 388                         | 114            | 84                      | 55              | 88                 |
|                | Hapur         | Jindal Pipes Ltd, Hapur   | 16                                 | 398                         | 108            | 62                      | 40              | 84                 |
|                |               | Kanpur  | IIT 12 parameter                   | 3                           | 259            | 66                      | 88              | 38                 |
|                | Muzaffarnagar | Sahara Parivar Office, Kamal Cinema, Building, Railway Station Road | 11                                 | 170                         | 86             | 97                      | 62              | 39                 |
|                |               | Lekhpal Bhawan, Tehsil Sadar Campus                                 | 33                                 | 170                         | 87             | 97                      | 71              | 36                 |
|                |               | UP PPCB, E-12/1, Sector - 1   | 16                                 | 462                         | 117            | 97                      | 67              | 99                 |
|                |               | Gee-Pee Electroplating and Eng. Work                                | 12                                 | 454                         | 115            | 96                      | 74              | 85                 |
|                | Noida         | Subros, Noida   | 43                                 | 297                         | 95             | 97                      | 87              | 41                 |
|                |               | Golf Course, Noida  | 49                                 | 289                         | 94             | 97                      | 89              | 41                 |
| West Bengal    | Asansol       | Asansol Municipal Corporation                                       | 46                                 | 141                         | 81             | 104                     | 98              | 18                 |
|                | Barrackpore   | Barrackpore Municipality  | 47                                 | 114                         | 66             | 104                     | 60              | 14                 |
|                | Darjeeling    | Bose Institute Campus   | 13                                 | 43                          | 24             | 104                     | 0               | 6                  |
|                | Durgapur      | Bidhannagar, PCBL Club, Muchipara                                   | 53                                 | 127                         | 73             | 103                     | 91              | 15                 |
|                | Haldia        | Supermarket Building, Durgachak                                     | 10                                 | 121                         | 35             | 106                     | 17              | 23                 |
|                | Howrah        | Howrah Municipal Corporation  | 21                                 | 177                         | 73             | 105                     | 45              | 44                 |
|                |               | CDS & Health Centre, Bator  | 20                                 | 148                         | 63             | 104                     | 37              | 37                 |
|                | Kalyani       | College of Medicine & JNM Hospital, Kalyani Industrial Area         | 43                                 | 121                         | 60             | 104                     | 39              | 12                 |
|                |               | KMC office Building, Moulali  | 17                                 | 181                         | 62             | 104                     | 42              | 44                 |
|                | Kolkata       | Minto Park, Inside Park AJC Bose Road                               | 13                                 | 177                         | 52             | 104                     | 32              | 42                 |
|                |               | Behala Chowrasta, Traffic Guard Building                            | 14                                 | 173                         | 52             | 104                     | 34              | 41                 |
|                |               | Tennis Club Biulding, 45-46 Canal West Road, Fariapukur, Shyambazar | 14                                 | 175                         | 57             | 104                     | 36              | 45                 |
|                | Sankrail      | P Mukherjee's House, Near SBI Amta                                  | 21                                 | 51                          |                | 10                      | 0               | 9                  |
|                | Siliguri      | Siliguri  | 11                                 | 68                          | 32             | 105                     | 2               | 14                 |

Note:

Cities under Ecologically Sensitive Area (5 cities namely Alwar, Agra, Firozabad, Mathura, Dehradun) as notified by Central Government. The rest of the cities are under Industrial / Residential / Rural / others category of the National Ambient Air Quality Standard, 2009

Annual NAAQS of PM<sub>2.5</sub> is 40 µg/m<sup>3</sup> for Residential/ industrial / other area and for ecologically sensitive area.

**Ambient Air Quality Monitoring Stations under National Ambient Air Quality Monitoring Programme (NAMP) – manual stations**

| S. No. | States & UTs                              | Sl. No. | City/Town/Village              | Number of stations |
|--------|---|---------|--------------------------------|--------------------|
| 1.     | Andhra Pradesh                            | 1.      | Anantapur                      | 4                  |
|        |   | 2.      | Chittoor                       | 5                  |
|        |   | 3.      | Eluru                          | 4                  |
|        |   | 4.      | Guntur                         | 4                  |
|        |   | 5.      | Kadapa                         | 5                  |
|        |   | 6.      | Kakinada                       | 4                  |
|        |   | 7.      | Kurnool                        | 4                  |
|        |   | 8.      | Nellore                        | 4                  |
|        |   | 9.      | Ongole                         | 4                  |
|        |   | 10.     | Rajahmundry/ Rajamahendravaram | 4                  |
|        |   | 11.     | Srikakulam                     | 4                  |
|        |   | 12.     | Tirupati                       | 4                  |
|        |   | 13.     | Vijaywada                      | 9                  |
|        |   | 14.     | Vishakhapatnam                 | 9                  |
|        |   | 15.     | Vizianagaram                   | 4                  |
| 2.     | Arunachal Pradesh                         | 16.     | Itanagar                       | 1                  |
|        |   | 17.     | Naharlagun                     | 1                  |
| 3.     | Assam                                     | 18.     | Bongaigaon                     | 2                  |
|        |   | 19.     | Daranga                        | 1                  |
|        |   | 20.     | Dibrugarh                      | 1                  |
|        |   | 21.     | Golaghat                       | 1                  |
|        |   | 22.     | Guwahati                       | 6                  |
|        |   | 23.     | Margherita                     | 1                  |
|        |   | 24.     | Nagaon                         | 1                  |
|        |   | 25.     | Nalbari                        | 1                  |
|        |   | 26.     | North Lakhimpur                | 1                  |
|        |   | 27.     | Silchar                        | 2                  |
|        |   | 28.     | Sivasagar                      | 2                  |
|        |   | 29.     | Tezpur                         | 1                  |
|        |   | 30.     | Tinsukia                       | 3                  |
| 4.     | Bihar                                     | 31.     | Begusarai                      | 1                  |
|        |   | 32.     | Darbhanga                      | 1                  |
|        |   | 33.     | Gaya                           | 1                  |
|        |   | 34.     | Muzaffarpur                    | 1                  |
|        |   | 35.     | Patna                          | 2                  |
|        |   | 36.     | Rajgir                         | 1                  |
|        |   | 37.     | Sasaram                        | 1                  |
| 5.     | Chandigarh (UT)                           | 38.     | Chandigarh                     | 5                  |
| 6.     | Chhattisgarh                              | 39.     | Bilaspur                       | 1                  |
|        |   | 40.     | Durg-Bhillainagar              | 4                  |
|        |   | 41.     | Korba                          | 3                  |
|        |   | 42.     | Raigarh                        | 3                  |
|        |   | 43.     | Raipur                         | 2                  |
| 7.     | Dadra & Nagar Haveli and Daman & Diu (UT) | 44.     | Baldevi (Dadra & Nagar Haveli) | 1                  |
|        |   | 45.     | Daman                          | 2                  |
|        |   | 46.     | Patlara (Daman)                | 1                  |
|        |   | 47.     | Silvassa                       | 2                  |
| 8.     | Delhi (UT)                                | 48.     | Delhi                          | 10                 |
| 9.     | Goa                                       | 49.     | Amona                          | 1                  |

Annexure 7: List of Ambient Air Quality Monitoring Stations under NAMP

| S. No. | States & UTs         | Sl. No. | City/Town/Village | Number of stations |
|--------|----------------------|---------|-------------------|--------------------|
|        |                      | 50.     | Assanora          | 1                  |
|        |                      | 51.     | Bicholim          | 1                  |
|        |                      | 52.     | Codli             | 1                  |
|        |                      | 53.     | Cuncolim          | 1                  |
|        |                      | 54.     | Curchoorem        | 1                  |
|        |                      | 55.     | Honda             | 1                  |
|        |                      | 56.     | Kundaim           | 1                  |
|        |                      | 57.     | Mapusa            | 1                  |
|        |                      | 58.     | Margao            | 1                  |
|        |                      | 59.     | Mormugao          | 1                  |
|        |                      | 60.     | Panaji            | 1                  |
|        |                      | 61.     | Ponda             | 1                  |
|        |                      | 62.     | Sanguem           | 1                  |
|        |                      | 63.     | Tilamol           | 1                  |
|        |                      | 64.     | Tuem              | 1                  |
|        |                      | 65.     | Usgao             | 1                  |
|        |                      | 66.     | Vasco             | 1                  |
| 10.    | Gujarat              | 67.     | Ahmedabad         | 9                  |
|        |                      | 68.     | Anklesvar         | 2                  |
|        |                      | 69.     | Jamnagar          | 1                  |
|        |                      | 70.     | Rajkot            | 2                  |
|        |                      | 71.     | Surat             | 3                  |
|        |                      | 72.     | Vadodara          | 5                  |
|        |                      | 73.     | Vapi              | 2                  |
| 11.    | Haryana              | 74.     | Faridabad         | 2                  |
|        |                      | 75.     | Hissar            | 2                  |
|        |                      | 76.     | Yamunanagar       | 1                  |
| 12.    | Himachal Pradesh     | 77.     | Baddi             | 3                  |
|        |                      | 78.     | Damtal            | 2                  |
|        |                      | 79.     | Dharamshala       | 2                  |
|        |                      | 80.     | Gulaba            | 1                  |
|        |                      | 81.     | Kala Amb          | 2                  |
|        |                      | 82.     | Manali            | 2                  |
|        |                      | 83.     | Marhi             | 1                  |
|        |                      | 84.     | Nalagarh          | 1                  |
|        |                      | 85.     | Paonta Sahib      | 2                  |
|        |                      | 86.     | Parwanoo          | 2                  |
|        |                      | 87.     | Shimla            | 2                  |
|        |                      | 88.     | Sunder Nagar      | 2                  |
|        |                      | 89.     | Una               | 2                  |
|        |                      | 90.     | Vashisht          | 1                  |
| 13.    | Jammu & Kashmir (UT) | 91.     | Jammu             | 3                  |
|        |                      | 92.     | Pulwama           | 1                  |
|        |                      | 93.     | Srinagar          | 3                  |
| 14.    | Jharkhand            | 94.     | Barajamda         | 1                  |
|        |                      | 95.     | Dhanbad           | 3                  |
|        |                      | 96.     | Jamshedpur        | 2                  |
|        |                      | 97.     | Jharia            | 1                  |
|        |                      | 98.     | Ranchi            | 1                  |
|        |                      | 99.     | Saraikela         | 1                  |
|        |                      | 100.    | Sindri            | 1                  |
| 15.    | Karnataka            | 101.    | Bagalkote         | 1                  |
|        |                      | 102.    | Bangalore         | 9                  |

Annexure 7: List of Ambient Air Quality Monitoring Stations under NAMP

| S. No. | States & UTs     | Sl. No. | City/Town/Village  | Number of stations |
|--------|------------------|---------|--------------------|--------------------|
| 16.    | Kerala           | 103.    | Belgaum            | 1                  |
|        |                  | 104.    | Bidar              | 1                  |
|        |                  | 105.    | Bijapur            | 1                  |
|        |                  | 106.    | Chitradurga        | 1                  |
|        |                  | 107.    | Devanagere         | 3                  |
|        |                  | 108.    | Gulburga           | 1                  |
|        |                  | 109.    | Hassan             | 1                  |
|        |                  | 110.    | Hubli-Dharwad      | 2                  |
|        |                  | 111.    | Karwar             | 1                  |
|        |                  | 112.    | Kolar              | 1                  |
|        |                  | 113.    | Mandya             | 1                  |
|        |                  | 114.    | Mangalore          | 1                  |
|        |                  | 115.    | Mysore             | 2                  |
|        |                  | 116.    | Raichur            | 1                  |
|        |                  | 117.    | Shimoga            | 1                  |
|        |                  | 118.    | Timukuru           | 1                  |
|        |                  | 119.    | Alappuzha          | 3                  |
|        |                  | 120.    | Kochi              | 8                  |
|        |                  | 121.    | Kollam             | 2                  |
|        |                  | 122.    | Kottayam           | 2                  |
|        |                  | 123.    | Kozhikode          | 2                  |
|        |                  | 124.    | Malappuram         | 2                  |
|        |                  | 125.    | Palakkad           | 1                  |
|        |                  | 126.    | Pathanamthitta     | 1                  |
|        |                  | 127.    | Thiruvananthapuram | 4                  |
|        |                  | 128.    | Thissur            | 2                  |
|        |                  | 129.    | Wayanad            | 2                  |
| 17.    | Lakshwadeep (UT) | 130.    | Kavaratti          | 1                  |
| 18.    | Madhya Pradesh   | 131.    | Amlai              | 2                  |
|        |                  | 132.    | Bhopal             | 8                  |
|        |                  | 133.    | Chhindwara         | 2                  |
|        |                  | 134.    | Dewas              | 3                  |
|        |                  | 135.    | Gwalior            | 2                  |
|        |                  | 136.    | Indore             | 3                  |
|        |                  | 137.    | Jabalpur           | 2                  |
|        |                  | 138.    | Katni              | 2                  |
|        |                  | 139.    | Nagda              | 3                  |
|        |                  | 140.    | Prithampur         | 2                  |
|        |                  | 141.    | Sagar              | 2                  |
|        |                  | 142.    | Satna              | 2                  |
|        |                  | 143.    | Singrauli          | 3                  |
|        |                  | 144.    | Ujjain             | 4                  |
| 19.    | Maharashtra      | 145.    | Akola              | 3                  |
|        |                  | 146.    | Ambernath          | 1                  |
|        |                  | 147.    | Amravati           | 3                  |
|        |                  | 148.    | Aurangabad         | 4                  |
|        |                  | 149.    | Badlapur           | 1                  |
|        |                  | 150.    | Bhiwandi           | 3                  |
|        |                  | 151.    | Chandrapur         | 6                  |
|        |                  | 152.    | Dombivali          | 1                  |
|        |                  | 153.    | Jalgaon            | 3                  |
|        |                  | 154.    | Jalna              | 2                  |
|        |                  | 155.    | Kolhapur           | 3                  |

Annexure 7: List of Ambient Air Quality Monitoring Stations under NAMP

| S. No. | States & UTs    | Sl. No. | City/Town/Village  | Number of stations |
|--------|-----------------|---------|--------------------|--------------------|
|        |                 | 156.    | Latur              | 3                  |
|        |                 | 157.    | Lote               | 2                  |
|        |                 | 158.    | Mahad              | 3                  |
|        |                 | 159.    | Mumbai             | 3                  |
|        |                 | 160.    | Nagpur             | 7                  |
|        |                 | 161.    | Nanded             | 3                  |
|        |                 | 162.    | Nashik             | 4                  |
|        |                 | 163.    | Navi Mumbai        | 6                  |
|        |                 | 164.    | Pimpri-Chinchwad   | 1                  |
|        |                 | 165.    | Pune               | 3                  |
|        |                 | 166.    | Roha               | 2                  |
|        |                 | 167.    | Sangli             | 3                  |
|        |                 | 168.    | Solapur            | 2                  |
|        |                 | 169.    | Tarapur            | 3                  |
|        |                 | 170.    | Thane              | 3                  |
|        |                 | 171.    | Ulhasnagar         | 2                  |
| 20.    | Manipur         | 172.    | Imphal             | 1                  |
|        |                 | 173.    | Byrnihat           | 1                  |
| 21.    | Meghalaya       | 174.    | Dawki              | 1                  |
|        |                 | 175.    | Khliehriat         | 1                  |
|        |                 | 176.    | Nongstoin          | 1                  |
|        |                 | 177.    | Shillong           | 4                  |
|        |                 | 178.    | Tura               | 1                  |
|        |                 | 179.    | Umiam / Umsning    | 1                  |
| 22.    | Mizoram         | 180.    | Aizawl             | 5                  |
|        |                 | 181.    | Champhai           | 2                  |
|        |                 | 182.    | Kolasib            | 2                  |
|        |                 | 183.    | Lunglei            | 2                  |
| 23.    | Nagaland        | 184.    | Dimapur            | 7                  |
|        |                 | 185.    | Kohima             | 2                  |
|        |                 | 186.    | Angul              | 2                  |
|        |                 | 187.    | Balasore           | 3                  |
|        |                 | 188.    | Berhampur          | 1                  |
|        |                 | 189.    | Bhubneshwar        | 6                  |
|        |                 | 190.    | Bonaigarh          | 1                  |
|        |                 | 191.    | Cuttack            | 3                  |
|        |                 | 192.    | Jharsuguda         | 3                  |
|        |                 | 193.    | Kalinga Nagar      | 3                  |
|        |                 | 194.    | Konark             | 1                  |
|        |                 | 195.    | Paradeep           | 3                  |
|        |                 | 196.    | Puri               | 2                  |
|        |                 | 197.    | Rajgangpur         | 1                  |
|        |                 | 198.    | Rayagada           | 2                  |
|        |                 | 199.    | Rourkela           | 4                  |
|        |                 | 200.    | Sambalpur          | 1                  |
|        |                 | 201.    | Talcher            | 2                  |
| 25.    | Puducherry (UT) | 202.    | Karaikal           | 3                  |
|        |                 | 203.    | Puducherry         | 3                  |
| 26.    | Punjab          | 204.    | Aligarh (Jagraon)  | 1                  |
|        |                 | 205.    | Amritsar           | 2                  |
|        |                 | 206.    | Aspal Khurd (Tapa) | 1                  |
|        |                 | 207.    | Bara Pind (Goraya) | 1                  |
|        |                 | 208.    | Bhatinda           | 1                  |

Annexure 7: List of Ambient Air Quality Monitoring Stations under NAMP

| S. No. | States & UTs | Sl. No. | City/Town/Village          | Number of stations |
|--------|--------------|---------|----------------------------|--------------------|
|        |              | 209.    | Binjon (Garshankar)        | 1                  |
|        |              | 210.    | Bishanpura (Payal)         | 1                  |
|        |              | 211.    | Changal (Sangrur)          | 1                  |
|        |              | 212.    | Chowkimann (Jagraon)       | 1                  |
|        |              | 213.    | Dera Baba Nanak            | 1                  |
|        |              | 214.    | Dera Bassi                 | 2                  |
|        |              | 215.    | Fatehpur (Samana)          | 1                  |
|        |              | 216.    | Gobindgarh                 | 3                  |
|        |              | 217.    | Guru Ki Dhab (Kotkapura)   | 1                  |
|        |              | 218.    | Jaito Sarja (Batala)       | 1                  |
|        |              | 219.    | Jalandhar                  | 4                  |
|        |              | 220.    | Khanna                     | 2                  |
|        |              | 221.    | Kharaori (Sirhind)         | 1                  |
|        |              | 222.    | Kotladoom (Ajnala)         | 1                  |
|        |              | 223.    | Lakho ke Behram (Ferozpur) | 1                  |
|        |              | 224.    | Ludhiana                   | 4                  |
|        |              | 225.    | Mrar Kalan (Muktsar)       | 1                  |
|        |              | 226.    | Mukandpur (Nawashahar)     | 1                  |
|        |              | 227.    | Mureedke (Batala)          | 1                  |
|        |              | 228.    | Naudhrani (Malerkotla)     | 1                  |
|        |              | 229.    | Naya Nangal                | 2                  |
|        |              | 230.    | Patiala                    | 2                  |
|        |              | 231.    | Peer Mohammad (Jalalabad)  | 1                  |
|        |              | 232.    | Poohli (Bhatinda)          | 1                  |
|        |              | 233.    | Qila Bharian (Sangrur)     | 1                  |
|        |              | 234.    | Rakhra (Patiala)           | 1                  |
|        |              | 235.    | Rohila (Samrala)           | 1                  |
|        |              | 236.    | Subanpur (Dhilwan)         | 1                  |
|        |              | 237.    | Tirathpur (Amritsar I)     | 1                  |
| 27.    | Rajasthan    | 238.    | Alwar                      | 3                  |
|        |              | 239.    | Bharatpur                  | 3                  |
|        |              | 240.    | Bhiwadi                    | 3                  |
|        |              | 241.    | Chittorgarh                | 3                  |
|        |              | 242.    | Jaipur                     | 9                  |
|        |              | 243.    | Jodhpur                    | 9                  |
|        |              | 244.    | Kota                       | 6                  |
|        |              | 245.    | Udaipur                    | 3                  |
| 28.    | Sikkim       | 246.    | Chungthang                 | 1                  |
|        |              | 247.    | Gangtok                    | 2                  |
|        |              | 248.    | Mangan                     | 1                  |
|        |              | 249.    | Namchi                     | 1                  |
|        |              | 250.    | Pelling                    | 1                  |
|        |              | 251.    | Rangpo                     | 1                  |
|        |              | 252.    | Ravangla                   | 1                  |
|        |              | 253.    | Singtam                    | 1                  |
| 29.    | Tamilnadu    | 254.    | Chennai                    | 11                 |
|        |              | 255.    | Coimbatore                 | 3                  |
|        |              | 256.    | Cuddalore                  | 3                  |
|        |              | 257.    | Madurai                    | 3                  |
|        |              | 258.    | Mettur                     | 2                  |
|        |              | 259.    | Salem                      | 1                  |
|        |              | 260.    | Trichy                     | 5                  |
|        |              | 261.    | Tuticorin                  | 3                  |

Annexure 7: List of Ambient Air Quality Monitoring Stations under NAMP

| S. No. | States & UTs  | Sl. No. | City/Town/Village | Number of stations |
|--------|---------------|---------|-------------------|--------------------|
| 30.    | Telangana     | 262.    | Adilabad          | 1                  |
|        |               | 263.    | Hyderabad         | 10                 |
|        |               | 264.    | Karimnagar        | 1                  |
|        |               | 265.    | Khammam           | 2                  |
|        |               | 266.    | Kothur            | 1                  |
|        |               | 267.    | Nalgonda          | 2                  |
|        |               | 268.    | Nizamabad         | 1                  |
|        |               | 269.    | Patencheru        | 1                  |
|        |               | 270.    | Ramagundam        | 1                  |
|        |               | 271.    | Sangareddy        | 3                  |
|        |               | 272.    | Warangal          | 2                  |
| 31.    | Tripura       | 273.    | Agartala          | 2                  |
| 32.    | Uttar Pradesh | 274.    | Agra              | 6                  |
|        |               | 275.    | Allahabad         | 5                  |
|        |               | 276.    | Anpara            | 2                  |
|        |               | 277.    | Baghpat           | 2                  |
|        |               | 278.    | Bareily           | 2                  |
|        |               | 279.    | Firozabad         | 3                  |
|        |               | 280.    | Gajraula          | 2                  |
|        |               | 281.    | Ghaziabad         | 4                  |
|        |               | 282.    | Gorakpur          | 3                  |
|        |               | 283.    | Greater Noida     | 2                  |
|        |               | 284.    | Hapur             | 2                  |
|        |               | 285.    | Jhansi            | 2                  |
|        |               | 286.    | Kanpur            | 9                  |
|        |               | 287.    | Khurja            | 2                  |
|        |               | 288.    | Lucknow           | 8                  |
|        |               | 289.    | Mathura           | 2                  |
|        |               | 290.    | Meerut            | 2                  |
|        |               | 291.    | Moradabad         | 2                  |
|        |               | 292.    | Muzaffarnagar     | 2                  |
|        |               | 293.    | Noida             | 4                  |
|        |               | 294.    | Raebareli         | 3                  |
|        |               | 295.    | Saharanpur        | 2                  |
|        |               | 296.    | Unnao             | 2                  |
|        |               | 297.    | Varanasi          | 5                  |
| 33.    | Uttarakhand   | 298.    | Dehradun          | 3                  |
|        |               | 299.    | Haldwani          | 1                  |
|        |               | 300.    | Haridwar          | 1                  |
|        |               | 301.    | Kashipur          | 1                  |
|        |               | 302.    | Rishikesh         | 1                  |
|        |               | 303.    | Rudrapur          | 1                  |
| 34.    | West Bengal   | 304.    | Alipurduar        | 3                  |
|        |               | 305.    | Amtala            | 1                  |
|        |               | 306.    | Asansol           | 3                  |
|        |               | 307.    | Baharampur        | 1                  |
|        |               | 308.    | Balurghat         | 1                  |
|        |               | 309.    | Bankura           | 1                  |
|        |               | 310.    | Barasat           | 1                  |
|        |               | 311.    | Bardhaman         | 1                  |
|        |               | 312.    | Barrackpore       | 3                  |
|        |               | 313.    | Baruipur          | 1                  |
|        |               | 314.    | Bolpur            | 1                  |

Annexure 7: List of Ambient Air Quality Monitoring Stations under NAMP

| S. No. | States & UTs                      | Sl. No. | City/Town/Village | Number of stations  |
|--------|-----------------------------------|---------|-------------------|---------------------|
|        |                                   | 315.    | Chinsura          | 1                   |
|        |                                   | 316.    | Coochbehar        | 2                   |
|        |                                   | 317.    | Dankuni           | 1                   |
|        |                                   | 318.    | Darjeeling        | 1                   |
|        |                                   | 319.    | Durgapur          | 4                   |
|        |                                   | 320.    | Ghatal            | 1                   |
|        |                                   | 321.    | Haldia            | 4                   |
|        |                                   | 322.    | Howrah            | 4                   |
|        |                                   | 323.    | Jalpaiguri        | 1                   |
|        |                                   | 324.    | Jhargram          | 1                   |
|        |                                   | 325.    | Kalimpong         | 1                   |
|        |                                   | 326.    | Kalyani           | 1                   |
|        |                                   | 327.    | Kharagpur         | 1                   |
|        |                                   | 328.    | Kolkata           | 21                  |
|        |                                   | 329.    | Krishnanagar      | 1                   |
|        |                                   | 330.    | Madhyamgram       | 1                   |
|        |                                   | 331.    | Malda             | 1                   |
|        |                                   | 332.    | Medinipur         | 1                   |
|        |                                   | 333.    | Purulia           | 1                   |
|        |                                   | 334.    | Raiganj           | 1                   |
|        |                                   | 335.    | Rampurhat         | 1                   |
|        |                                   | 336.    | Ranaghat          | 1                   |
|        |                                   | 337.    | Raniganj          | 3                   |
|        |                                   | 338.    | Rishra            | 1                   |
|        |                                   | 339.    | Sankrail          | 4                   |
|        |                                   | 340.    | Siliguri          | 1                   |
|        |                                   | 341.    | Suri              | 1                   |
|        |                                   | 342.    | Tamluk            | 1                   |
|        |                                   | 343.    | Tribeni           | 1                   |
|        |                                   | 344.    | Uluberia          | 1                   |
|        | <b>28 States &amp; 6 UTs = 34</b> |         | <b>344 Cities</b> | <b>804 Stations</b> |

NB. Village names with tehsil in parentheses under City / town / village are rural stations.

**Non-Attainment cities (122 cities) with respect to Ambient Air Quality India (2014-2018)**

| S. No. | State            | S. No. | City              |
|--------|------------------|--------|-------------------|
| 1.     | Andhra Pradesh   | 1.     | Anantapur         |
|        |                  | 2.     | Chitoor           |
|        |                  | 3.     | Eluru             |
|        |                  | 4.     | Guntur            |
|        |                  | 5.     | Kadapa            |
|        |                  | 6.     | Kurnool           |
|        |                  | 7.     | Nellore           |
|        |                  | 8.     | Ongole            |
|        |                  | 9.     | Rajahmundry       |
|        |                  | 10.    | Srikakulam        |
|        |                  | 11.    | Vijaywada         |
|        |                  | 12.    | Vishakhapatnam    |
|        |                  | 13.    | Vizianagaram      |
| 2.     | Assam            | 14.    | Guwahati          |
|        |                  | 15.    | Nagaon            |
|        |                  | 16.    | Nalbari           |
|        |                  | 17.    | Sibsagar          |
|        |                  | 18.    | Silcher           |
| 3.     | Bihar            | 19.    | Gaya              |
|        |                  | 20.    | Muzzaffarpur      |
|        |                  | 21.    | Patna             |
| 4.     | Chandigarh       | 22.    | Chandigarh        |
| 5.     | Chhattisgarh     | 23.    | Durg Bhillainagar |
|        |                  | 24.    | Korba             |
|        |                  | 25.    | Raipur            |
| 6.     | Delhi            | 26.    | Delhi             |
| 7.     | Gujarat          | 27.    | Ahmedabad         |
|        |                  | 28.    | Surat             |
|        |                  | 29.    | Vadodara          |
| 8.     | Himachal Pradesh | 30.    | Baddi             |
|        |                  | 31.    | Damtal            |
|        |                  | 32.    | Kala Amb          |
|        |                  | 33.    | Nalagarh          |
|        |                  | 34.    | Paonta Sahib      |
|        |                  | 35.    | Parwanoo          |
|        |                  | 36.    | Sunder Nagar      |
| 9.     | Jammu & Kashmir  | 37.    | Jammu             |
|        |                  | 38.    | Srinagar          |
| 10.    | Jharkhand        | 39.    | Dhanbad           |
| 11.    | Karnataka        | 40.    | Bangalore         |
|        |                  | 41.    | Devangere         |
|        |                  | 42.    | Gulburga          |
|        |                  | 43.    | Hubli-Dharwad     |
|        |                  | 44.    | Bhopal            |
| 12.    | Madhya Pradesh   | 45.    | Dewas             |
|        |                  | 46.    | Gwalior           |
|        |                  | 47.    | Indore            |
|        |                  | 48.    | Sagar             |
|        |                  | 49.    | Ujjain            |
|        |                  | 50.    | Akola             |
| 13.    | Maharashtra      | 51.    | Amravati          |
|        |                  | 52.    | Aurangabad        |
|        |                  | 53.    | Badlapur          |
|        |                  | 54.    | Chandrapur        |
|        |                  | 55.    | Jalgaon           |
|        |                  | 56.    | Jalna             |
|        |                  | 57.    | Kolhapur          |
|        |                  | 58.    | Latur             |
|        |                  | 59.    | Mumbai            |
|        |                  | 60.    | Nagpur            |
|        |                  | 61.    | Nashik            |
|        |                  | 62.    | Navi Mumbai       |
|        |                  | 63.    | Pune              |

| S. No. | State         | S. No. | City            |
|--------|---------------|--------|-----------------|
|        |               | 64.    | Sangli          |
|        |               | 65.    | Solapur         |
|        |               | 66.    | Thane           |
|        |               | 67.    | Ulhasnagar      |
| 14.    | Meghalaya     | 68.    | Byrnihat        |
| 15.    | Nagaland      | 69.    | Dimapur         |
|        |               | 70.    | Kohima          |
| 16.    | Odisha        | 71.    | Angul           |
|        |               | 72.    | Balasore        |
|        |               | 73.    | Bhubneshwar     |
|        |               | 74.    | Cuttack         |
|        |               | 75.    | Kalinga Nagar   |
|        |               | 76.    | Rourkela        |
|        |               | 77.    | Talcher         |
| 17.    | Punjab        | 78.    | Amritsar        |
|        |               | 79.    | Dera Baba Nanak |
|        |               | 80.    | Dera Bassi      |
|        |               | 81.    | Gobindgarh      |
|        |               | 82.    | Jalandhar       |
|        |               | 83.    | Khanna          |
|        |               | 84.    | Ludhiana        |
|        |               | 85.    | Naya Nangal     |
|        |               | 86.    | Patiala         |
| 18.    | Rajasthan     | 87.    | Alwar           |
|        |               | 88.    | Jaipur          |
|        |               | 89.    | Jodhpur         |
|        |               | 90.    | Kota            |
|        |               | 91.    | Udaipur         |
| 19.    | Tamilnadu     | 92.    | Trichy          |
|        |               | 93.    | Tuticorin       |
| 20.    | Telangana     | 94.    | Hyderabad       |
|        |               | 95.    | Nalgonda        |
|        |               | 96.    | Patancheru      |
|        |               | 97.    | Sangareddy      |
| 21.    | Uttar Pradesh | 98.    | Agra            |
|        |               | 99.    | Allahabad       |
|        |               | 100.   | Anpara          |
|        |               | 101.   | Bareily         |
|        |               | 102.   | Firozabad       |
|        |               | 103.   | Gajraula        |
|        |               | 104.   | Ghaziabad       |
|        |               | 105.   | Jhansi          |
|        |               | 106.   | Kanpur          |
|        |               | 107.   | Khurja          |
|        |               | 108.   | Lucknow         |
|        |               | 109.   | Moradabad       |
|        |               | 110.   | Noida           |
|        |               | 111.   | Raebareli       |
|        |               | 112.   | Varanasi        |
| 22.    | Uttarakhand   | 113.   | Dehradun        |
|        |               | 114.   | Kashipur        |
|        |               | 115.   | Rishikesh       |
| 23.    | West Bengal   | 116.   | Asansol         |
|        |               | 117.   | Barrackpore     |
|        |               | 118.   | Durgapur        |
|        |               | 119.   | Haldia          |
|        |               | 120.   | Howrah          |
|        |               | 121.   | Kolkata         |
|        |               | 122.   | Raniganj        |



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