

GOVERNMENT OF INDIA  
MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE

**LOK SABHA**  
**UN-STARRED QUESTION NO. 2937**  
TO BE ANSWERED ON 03.08.2018

**Pollution Standards**

2937. DR.PRABHAS KUMAR SINGH:  
SHRI BADRUDDINAJMAL:

Will the Minister of ENVIRONMENT, FOREST AND CLIMATE CHANGE be pleased to state:

- (a) whether the Government or any of its agencies are conducting periodic test on the level of pollution in various cities of the country including Odisha;
- (b) if so, the details thereof during each of the last four years, State/UT-wise;
- (c) whether the Government has fixed pollution standard for cities in the country;
- (d) if so, the details thereof; and
- (e) the steps taken by the Government to make the cities pollution free in the country?

**ANSWER**

**MINISTER OF STATE IN THE MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE**  
**(DR. MAHESH SHARMA)**

(a) & (b) The ambient air quality is being monitored at 703 ambient air quality monitoring stations covering 307 cities/towns in 29 States including Odisha and 6 Union Territories under National Air Quality Monitoring Programme (NAMP). Under NAMP, three air pollutants viz., Sulphur Dioxide (SO<sub>2</sub>), Nitrogen Dioxide (NO<sub>2</sub>) and Particulate Matter size equal to or less than 10 micron (PM<sub>10</sub>) are being monitored at all the locations. Under NAMP, there are 38 air quality monitoring stations covering 14 cities in Odisha. Ambient air quality data of different cities of the country including Odisha during 2013, 2014, 2015 and 2016 with respect to SO<sub>2</sub>, NO<sub>2</sub> and PM<sub>10</sub> is attached at **Annexure-I**.

Nationwide water quality monitoring is carried out under National Water Quality Monitoring Programme (NWMP) at 3500 locations including surface and ground water.

Based on assessment of water quality of rivers carried out during Year 2017, 317 polluted river stretches on 293 rivers were identified with respect to indicator of organic pollution i.e. Biochemical Oxygen Demand (BOD) and Fecal Coliform Bacteria (FC) throughout the country. 659 towns were identified as polluting sources along the respective river stretches out of which 35 are metropolitan cities (**Annexure-II**).

- (c) & (d) The revised National Ambient Air Quality Standards (NAAQS) have been notified in 2009. The NAAQS is given in **Annexure III**. Primary Water Quality Criteria limits notified under E (P) Rules, 1986 is applicable for all the water bodies in the country. Primary Water Quality Criteria is given in **Annexure IV**.
- (e) The Government has taken several steps to address air pollution which inter alia, include notification of National Ambient Air Quality Standards; setting up of monitoring network for assessment of ambient air quality; introduction of cleaner / alternate fuels like gaseous fuel (CNG, LPG etc.), ethanol blending, launching of National Air Quality index; universalization of BS-IV since 2017; leapfrogging from BS-IV to BS-VI fuel standards by 1st April, 2020; notification of Construction and Demolition Waste Management Rules; banning of burning of biomass; promotion of public transport network; streamlining the issuance of Pollution Under Control Certificate; issuance of directions under Section 18(1)(b) of Air (Prevention and Control of Pollution) Act, 1981 and under Section 5 of Environment (Protection) Act, 1986; installation of on-line continuous (24x7) monitoring devices by major industries; etc.

The Government has taken several steps to address water pollution which inter alia, include notification of 'Sewage Discharge Standards for STPs' under the Environmental (Protection) Act, 1986; issuance of directions under Section 18(1)(b) of Water (Prevention and Control of Pollution) Act, 1974 to State Pollution Control Boards (SPCBs)/ Pollution Control Committees (PCCs) regarding treatment & utilization of sewage; issuance of directions under Section 5 of Environment (Protection) Act, 1986 regarding 'Treatment and Utilization of Sewage for Restoration of Water Quality of River' to Municipal Corporations of 46 Metropolitan Cities and 20 State Capitals; issuance of directions to implement 'Zero Liquid Discharge' for various industrial sectors for protection of water quality of rivers and streams; Common Effluent Treatment Plants (CETPs) for clusters of Small Scale Industrial units; continuous water quality monitoring system for getting real time information on the effluent quality through installation of on-line continuous (24x7) monitoring devices by major industries; etc.

\*\*\*\*\*

## Annexure I

### Ambient Air Quality in cities during 2013

State	City	Annual average Concentration in $\mu\text{g}/\text{m}^3$		
		SO <sub>2</sub>	NO <sub>2</sub>	PM <sub>10</sub>
Andhra Pradesh	Chittoor	4	9	51
	Guntur	4	17	75
	Hyderabad	5	24	90
	Khammam	5	17	62
	Kakinada	13	19	59
	Anatapur	4	13	70
	Kadapa	5	10	70
	Karimnagar	7	12	65
	Nalgonda	4	16	76
	Adilabad District	5	14	61
	nizamabad	5	12	56
	Prakasam	4	17	64
	Rajahmundry	11	17	68
	Gaddapotharam Medak District	9	17	118
	Srikakulam	11	16	76
	Vizianagaram	13	19	63
	Kurnool	4	10	76
	Nellore	5	17	62
	Eluru	6	15	115
	Patencheru	6	24	91
Ramagundam	10	15	84	
Tirupati	4	9	44	
Vijaywada	5	19	104	
Warangal	7	13	49	
Vishakhapatnam	13	18	67	
Assam	Bongaigaon	7	14	45
	Daranga	6	14	98
	Dibrugarh	7	15	99

State	City	Annual average Concentration in $\mu\text{g}/\text{m}^3$		
		SO <sub>2</sub>	NO <sub>2</sub>	PM <sub>10</sub>
	Golaghat	7	16	101
	Guwahati	7	16	147
	Margherita	7	15	77
	Lakhimpur	7	16	121
	Nagaon	7	15	132
	Nalbari	7	17	140
	Sibsagar	7	15	120
	Silchar	7	17	135
	Tezpur	7	14	120
	Tinsukia	6	14	99
Chandigarh	Chandigarh	2	28	101
Chattisgarh	Bilaspur	5	22	115
	Bhillai	8	22	102
	Korba	12	19	77
	Raipur	15	41	305
Dadra & Nagar Haveli	Silvassa	8	21	44
Daman & Diu	Daman	8	20	44
Delhi	Delhi	4	66	221
Goa	Panaji	7	10	46
	Marmagao	6	12	60
	Vasco	7	11	49
	Curchorem	7	13	54
	Codli	7	12	48
	Honda	7	12	54
	Bicholim	7	12	57
	Amona	7	12	55
	Assanora	7	12	54
	Usgao	6	12	54
	Margao	6	12	60
	Tilamol	7	12	53
	Mapusa	10	12	60
	Sanguem	7	12	46
Ponda	6	12	50	
Kundaim	7	13	54	
Gujarat	Ahmedabad	12	17	79
	Anklesvar	14	21	86
	Jamnagar	12	19	90
	Rajkot	12	17	87
	Surat	13	20	88
	Vadodara	14	19	89
	Vapi	13	20	93
Haryana	Faridabad	12	26	196
	Hissar	6	9	97
	Yamunanagar	10	23	153
Himachal Pradesh	Baddi	2	27	118
	Damtal	2	11	85
	Kala Amb	2	15	142
	Nalagarh	2	26	110
	Parwanoo	3	12	68
	Paonta Sahib	2	14	117
	Shimla	2	10	47
	Una	2	6	93
	Sunder Nagar	2	8	74
Jammu & Kashmir	Manali	2	9	48
	Jammu	5	15	118
Jharkhand	Dhanbad	16	40	151
	Jamshedpur	35	45	135
	Jharia	16	39	193
	Ranchi	19	36	177
	Sindri	16	40	121
Karnataka	Bangalore	13	26	113
	Belgaum	2	19	74
	Gulbarga	3	14	88
	Hassan	5	18	26
	Hubli-Dharwad	6	15	96

State	City	Annual average Concentration in $\mu\text{g}/\text{m}^3$		
		SO <sub>2</sub>	NO <sub>2</sub>	PM <sub>10</sub>
	Mandya	11	23	43
	Mangalore	8	7	32
	Mysore	11	23	60
	Devanagere	5	8	92
	Raichur	9	13	79
	Chitradurga	3	6	29
	Shimoga	5	8	51
	Kolar	6	14	47
	Bidar	6	13	67
Kerala	Alappuzha	2	5	47
	Kochi	2	6	75
	Kollam	4	11	36
	Kottayam	7	19	70
	Kozhikode	2	17	48
	Malapuram	2	5	37
	Palakkad	3	5	39
	Pathanamthitta	2	14	24
	Thissur	2	12	46
	Wayanad	2	5	42
Thiruvananthapuram	9	22	54	
Madhya Pradesh	Bhopal	3	26	220
	Dewas	16	21	102
	Gwalior	13	27	197
	Indore	11	19	156
	Jabalpur	2	23	69
	Nagda	26	27	106
	Sagar	2	14	156
	Ujjain	13	14	82
Maharashtra	Dombivali/Ambarnath	25	54	91
	Amravati	11	13	90
	Aurangabad	10	37	84
	Badlapur	25	46	84
	Chandrapur	13	22	129
	Jalgaon	20	43	131
	Kolhapur	22	36	118
	Latur	6	17	97
	Lote	10	9	131
	Mumbai	3	13	117
	Nagpur	8	27	89
	Nashik	28	29	85
	Navi Mumbai	17	44	137
	Pune	20	42	87
	Sangli	10	39	76
	Solapur	16	35	83
	Thane	17	32	110
	Ulhasnagar	23	43	75
	Jalna	11	31	122
	Akola	7	8	133
Nanded	33	31	63	
Meghalaya	Byrnihat	22	15	122
	Dawki	3	10	42
	Tura	2	6	38
	Nongstoin	2	6	24
	Shillong	2	11	65
	khliehriat	2	6	36
Mizoram	Aizawl	2	9	48
	Lunglei	2	5	46
	Kolasib	2	5	42
	Champhai	2	5	57
Nagaland	Dimapur	2	6	101
	Kohima	2	5	85
Orissa	Angul	8	21	106
	Balasore	4	13	87
	Berhampur	2	20	75
	Puri	2	14	63

State	City	Annual average Concentration in $\mu\text{g}/\text{m}^3$		
		SO <sub>2</sub>	NO <sub>2</sub>	PM <sub>10</sub>
	Bhubneshwar	2	17	87
	Cuttack	2	17	83
	Rayagada	4	23	50
	Paradeep	3	13	55
	Rourkela	5	11	96
	Sambalpur	3	14	51
	Talcher	8	21	110
	Konark	2	12	63
	Kalinga Nagar	2	16	83
Punjab	Amritsar	13	40	180
	Bhatinda	7	22	130
	DeraBassi	7	21	129
	Pathankot/Dera Baba	8	13	76
	Gobindgarh	6	33	165
	Jalandhar	13	27	164
	Khanna	11	22	183
	Ludhiana	11	26	204
	NayaNangal	5	16	86
Puducherry	Patiala	6	18	108
	Sangrur	5	15	97
Puducherry	Puducherry	6	14	43
Rajasthan	Alwar	10	21	266
	Jaipur	7	40	160
	Jodhpur	5	23	176
	Kota	7	33	122
	Udaipur	6	32	141
Tamilnadu	Chennai	14	22	75
	Coimbatore	4	24	56
	Madurai	14	22	41
	Salem	9	25	62
	Tuticorin	13	18	77
	Trichy	14	18	87
	Mettur	9	25	58
Uttar Pradesh	Cuddalore	8	19	49
	Agra	5	21	184
	Allahabad	5	29	235
	Anpara	18	27	133
	Bareilly	11	25	232
	Firozabad	12	31	246
	Ghaziabad	26	34	285
	Jhansi	7	19	100
	Gajraula	17	25	137
	Kanpur	7	31	201
	Khurja	25	25	162
	Lucknow	8	29	192
	Moradabad	16	24	160
	Merrut	5	39	134
	Noida	9	31	142
	Varanasi	19	28	145
	Unnao	9	28	114
Raebareli	11	17	177	
Uttarakhand	Dehradun	25	28	156
	Haridwar	28	29	119
	Rishikesh	23	25	113
	Rudrapur	2	5	156
	Haldwani	@	@	144
	Kashipur	@	@	151
West Bengal	Asansol	10	52	160
	Barrackpore	11	50	166
	Durgapur	10	51	160
	Haldia	10	39	146
	Howrah	11	45	187
	Kolkata	11	70	159
	Raniganj	10	51	163
South Suburban	9	60	180	

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 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>, (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>, (Ecologically sensitive area)  
 @-data not available.

### Ambient Air Quality in cities during 2014

State	City	Annual average Concentration in µg/m <sup>3</sup>		
		SO <sub>2</sub>	NO <sub>2</sub>	PM <sub>10</sub>
Andhra Pradesh	Chittoor	5	12	65
	Guntur	5	23	79
	Kakinada	12	21	56
	Anatapur	5	10	76
	Kadapa	4	10	78
	Rajahmundry	11	18	64
	Srikakulam	14	22	69
	Vizianagaram	13	21	69
	Kurnool	4	10	77
	Nellore	5	21	63
	Eluru	@	@	121
	Vijaywada	5	24	100
	Vishakhapatnam	13	20	64
Arunachal Pradesh	Itnagar	2	5	75
	Naharlagun	2	5	64
Assam	Bongaigaon	7	13	50
	Daranga	6	13	70
	Dibrugarh	6	14	44
	Golaghat	7	14	63
	Guwahati	7	14	88
	Margherita	12	24	55
	Lakhimpur	6	14	66
	Nagaon	7	13	100
	Nalbari	7	15	76
	Sibsagar	6	12	90
	Sibsagar	6	14	80
	Tezpur	7	13	71
	Tinsukia	6	13	57
Chandigarh	Chandigarh	2	21	91
Chattisgarh	Bhillai	9	23	108
	Bilaspur	5	21	101
	Korba	13	19	72
	Raipur	16	41	329
Delhi	Delhi	5	61	217
Goa	Panaji	3	7	51
	Marmagao	3	7	70
	Vasco	3	8	52
	Curchorem	5	10	50
	Codli	5	10	52
	Honda	5	10	46
	Bicholim	5	10	50
	Amona	5	10	63
	Assanora	5	10	52
	Usgao	5	10	55
	Margao	5	10	58
	Tilamol	5	10	53
	Mapusa	9	11	59
	Sanguem	5	10	49
	cuncolim	4	9	60
	Ponda	5	10	54

State	City	Annual average Concentration in $\mu\text{g}/\text{m}^3$		
		SO <sub>2</sub>	NO <sub>2</sub>	PM <sub>10</sub>
	Kundaim	5	10	65
Gujarat	Ahmedabad	13	20	84
	Anklesvar	15	21	89
	Jamnagar	15	21	85
	Rajkot	13	19	82
	Surat	15	20	89
	Vadodara	15	21	87
	Vapi	14	20	93
Haryana	Faridabad	14	26	199
	Yamunanagar	11	19	68
Himachal Pradesh	Baddi	1	24	109
	Damtal	2	11	97
	Kala Amb	3	15	138
	Nalagarh	2	30	109
	Dharamshala	2	11	32
	Parwanoo	2	13	66
	Paonta Sahib	3	14	128
	Shimla	2	11	48
	Una	2	6	77
	Sunder Nagar	2	12	87
Jammu & Kashmir	Manali	2	11	40
	Jammu	5	13	123
Jharkhand	Dhanbad	14	36	166
	Jharia	14	37	237
	Ranchi	18	34	197
	Sindri	13	36	100
Karnataka	Bangalore	13	30	139
	Belgaum	2	9	76
	Gulbarga	5	12	77
	Hassan	6	19	25
	Hubli-Dharwad	5	18	90
	Mandya	11	22	43
	Mangalore	8	7	32
	Mysore	12	23	56
	Devanagere	4	7	85
	Raichur	9	13	112
	Bijapur	2	16	150
	Chitradurga	3	5	38
	Shimoga	5	8	42
	Kolar	6	12	67
	Bidar	6	14	62
Timukuru	11	34	117	
Kerala	Alappuzha	5	4	77
	Kochi	2	8	68
	Kollam	5	10	35
	Kottayam	6	21	61
	Kozhikode	2	19	46
	Malapuram	2	8	43
	Palakkad	4	6	39
	Pathanamthitta	2	12	22
	Thissur	2	11	55
	Wayanad	2	5	36
	Thiruvananthapuram	9	22	51
Madhya Pradesh	Bhopal	2	21	160
	Dewas	15	21	93
	Gwalior	11	17	144
	Indore	11	20	143
	Jabalpur	2	23	73
	Nagda	21	23	70
	Sagar	2	15	161
	Satna	3	7	163
	Ujjain	13	14	97
Maharashtra	Dombivali/Ambarnath	40	77	141
	Amravati	12	13	107
	Aurangabad	12	39	85



State	City	Annual average Concentration in $\mu\text{g}/\text{m}^3$		
		SO <sub>2</sub>	NO <sub>2</sub>	PM <sub>10</sub>
	Badlapur	40	58	122
	Chandrapur	9	28	129
	Jalgaon	19	42	116
	Kolhapur	21	37	100
	Latur	6	16	90
	Lote	11	11	112
	Mumbai	4	20	96
	Nagpur	11	25	103
	Nashik	25	26	72
	Navi Mumbai	18	40	151
	Pune	23	45	92
	Pimpri-Chinchwad	22	41	93
	Sangli	12	45	100
	Solapur	15	34	76
	Thane	18	60	109
	Ulhasnagar	34	56	107
	Jalna	10	30	137
	Akola	8	9	135
	Nanded	47	45	109
	Meghalaya	Byrnihat	26	20
Dawki		2	12	44
Tura		2	5	38
Nongstoin		2	10	28
Shillong		2	10	63
khliehriat		2	5	42
Mizoram	Aizawl	2	7	43
	Lunglei	2	5	48
	Kolasib	2	5	36
	Champhai	2	5	46
Nagaland	Dimapur	2	5	129
	Kohima	2	5	91
Orissa	Angul	10	23	116
	Balasore	4	12	87
	Berhampur	2	17	72
	Puri	2	16	67
	Bhubneshwar	2	18	90
	Cuttack	2	30	92
	Rayagada	4	20	52
	Paradeep	10	11	88
	Rourkela	6	11	83
	Sambalpur	3	16	55
	Talcher	9	24	124
	Konark	2	13	70
	Jharsuguda	11	19	112
Kalinga Nagar	2	10	94	
Punjab	Amritsar	11	31	145
	Bhatinda	6	17	122
	DeraBassi	6	15	113
	Faridkot	4	12	74
	Pathankot/Dera Baba	7	13	68
	Gobindgarh	7	36	135
	Jalandhar	13	26	144
	Khanna	10	23	160
	Ludhiana	10	26	146
	NayaNangal	4	12	85
	Patiala	5	14	104
Puducherry	Sangrur	4	12	88
	Hoshiarpur	7	14	55
	Karaikal	16	12	35
	Puducherry	5	13	42
Rajasthan	Alwar	11	23	240
	Jaipur	7	43	150
	Jodhpur	7	31	190
	Kota	7	35	127
	Udaipur	6	32	112

State	City	Annual average Concentration in $\mu\text{g}/\text{m}^3$		
		SO <sub>2</sub>	NO <sub>2</sub>	PM <sub>10</sub>
Tamilnadu	Chennai	13	22	57
	Coimbatore	5	25	49
	Madurai	13	26	46
	Salem	8	29	63
	Tuticorin	13	18	83
	Trichy	15	19	84
	Mettur	8	23	53
	cuddalore	9	20	62
Telangana	Hydrabad	5	24	95
	Karimnagar	5	12	61
	Khammam	4	17	66
	Adilabad District	5	12	67
	Nalgonda	5	18	93
	nizamabad	5	12	62
	Prakasam	5	22	63
	Sangarredy	8	30	96
	Patencheru	5	24	95
	Ramagundam	6	14	55
	Warangal	5	11	52
Uttar Pradesh	Agra	5	19	178
	Allahabad	4	28	250
	Anpara	18	27	131
	Bareilly	12	23	239
	Firizabad	12	26	146
	Gajraula	22	35	179
	Ghaziabad	27	39	242
	Jhansi	8	21	106
	Kanpur	6	34	199
	Khurja	21	21	158
	Lucknow	8	28	174
	Meerut	8	48	154
	Moradabad	21	32	201
	Noida	8	28	135
	Varanasi	19	32	139
	Unnao	10	29	73
	Raebareli	11	17	160
Uttarakhand	Dehradun	26	29	165
	Haldwani	@	@	149
	Haridwar	24	27	127
	Kashipur	@	@	121
	Rishikesh	24	28	122
	Rudrapur	@	@	139
West Bengal	Asansol	8	55	84
	Barrackpore	9	55	103
	Durgapur	9	56	102
	Haldia	11	38	136
	Howrah	9	35	111
	Kolkata	9	70	122
	Raniganj	9	58	134
	South Suburban	4	38	96

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  $\mu\text{g}/\text{m}^3$ , (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  $\mu\text{g}/\text{m}^3$ , (Ecologically sensitive area)  
@-data not available

#### Ambient Air Quality in cities for the year 2015

State	City	Annual average Concentration in $\mu\text{g}/\text{m}^3$		
		SO <sub>2</sub>	NO <sub>2</sub>	PM <sub>10</sub>

State	City	Annual average Concentration in $\mu\text{g}/\text{m}^3$		
		SO <sub>2</sub>	NO <sub>2</sub>	PM <sub>10</sub>
Arunachal Pradesh	Itanagar	4	7	91
	Naharlagun	4	4	70
Andhra Pradesh	Chittoor	5	13	67
	Guntur	5	26	100
	Kakinada	8	19	62
	Anantapur	5	11	88
	Kadapa	5	11	70
	Rajahmundry	7	18	62
	Srikakulam	10	22	73
	Vizianagaram	10	24	74
	Kurnool	5	10	82
	Nellore	5	28	66
	Eluru	5	23	77
	Tirupati	5	11	62
	Vijaywada	6	37	109
	Vishakhapatnam	9	19	61
Assam	Prakasam	5	29	67
	Bongaigaon	7	14	46
	Daranga	6	12	69
	Dibrugarh	7	15	109
	Golaghat	7	14	124
	Guwahati	7	14	97
	Margherita	7	15	115
	Lakhimpur	6	14	78
	Nagaon	8	15	137
	Nalbari	6	15	120
	Sibsagar	6	13	70
	Silchar	6	13	72
	Tezpur	7	14	90
	Tinsukia	7	15	119
Chandigarh	Chandigarh	2	25	85
Chattisgarh	Bhillai	9	23	109
	Bilaspur	6	22	99
	Korba	12	18	66
	Raipur	13	36	188
Dadra & Nagar Haveli	Silvassa	16	27	89
Daman & Diu	Daman	14	25	83
Delhi	Delhi	5	65	220
Goa	Panaji	5	15	53
	Marmagao	6	9	85
	Vasco	6	15	51
	Curchorem	4	9	52
	Codli	4	8	49
	Honda	4	9	49
	Bicholim	4	9	54
	Amona	4	9	62
	Assanora	4	9	52
	Usgao	4	9	52
	Margao	4	9	59
	Tilamol	4	9	54
	Mapusa	7	10	60
	Sanguem	4	9	47
	cuncolim	4	9	55
Ponda	4	9	51	
Kundaim	4	9	60	
Gujarat	Ahmedabad	13	21	89
	Anklesvar	15	21	88
	Jamnagar	13	20	84
	Rajkot	13	19	83
	Surat	14	20	89
	Vadodara	14	20	87
Vapi	13	21	88	
Haryana	Faridabad	15	74	105
Himachal Pradesh	Baddi	2	20	101
	Damtal	2	15	105
	Kala Amb	3	14	118
	Nalagarh	2	22	89
	Dharamshala	2	10	37
	Parwanoo	2	12	61

State	City	Annual average Concentration in $\mu\text{g}/\text{m}^3$		
		SO <sub>2</sub>	NO <sub>2</sub>	PM <sub>10</sub>
	Paonta Sahib	3	14	117
	Shimla	4	13	55
	Una	2	6	80
	Sunder Nagar	2	12	83
	Manali	2	10	46
Jammu & Kashmir	Jammu	4	17	125
Jharkhand	Dhanbad	12	37	168
	Jamshedpur	35	45	134
	Jharia	13	38	231
	Ranchi	19	36	220
	SaraikelaKharsawan	36	45	142
	Sindri	12	37	75
	West Singhbhum	18	23	111
Karnataka	Bangalore	6	20	119
	Belgaum	2	15	64
	Gulburga	3	22	95
	Hassan	6	19	25
	Hubli-Dharwad	6	22	75
	Mandya	10	22	42
	Mangalore	7	7	36
	Mysore	11	23	48
	Devanagere	4	8	109
	Raichur	6	10	92
	Bijapur	2	16	99
	Chitradurga	3	5	47
	Shimaga	3	6	36
	Kolar	6	15	75
	Bidar	6	13	59
Timukuru	5	22	134	
Kerala	Alappuzha	2	5	45
	Kochi	3	11	41
	Kollam	5	10	46
	Kottayam	5	21	60
	Kozhikode	2	21	48
	Malapuram	2	14	44
	Palakkad	2	8	47
	Pathanamthitta	2	14	25
	Thissur	2	8	48
	Wayanad	2	5	37
Thiruvananthapuram	10	25	55	
Madhya Pradesh	Bhopal	3	23	158
	Dewas	15	21	90
	Gwalior	10	14	125
	Indore	11	20	97
	Jabalpur	9	28	90
	Nagda	21	22	56
	Sagar	2	14	103
	Satna	@	7	125
	Singrauli	13	18	90
	Ujjain	13	14	93
	Chhindwara	8	31	85
	Amlai	15	23	64
	Prithampur	8	18	119
	Dombivali/Ambarnath	20	53	104
Maharashtra	Amravati	12	13	108
	Aurangabad	13	40	83
	Badlapur	21	55	105
	Chandrapur	5	20	102
	Jalgaon	16	39	108
	Kolhapur	21	38	97
	Latur	5	15	78
	Lote	11	11	163
	Mumbai	4	25	106
	Nagpur	10	25	90
	Nashik	15	23	78
	Navi Mumbai	18	42	125
	Pune	23	62	99
	Pimpri-Chinchwad	23	52	102
	Sangli	11	41	77

State	City	Annual average Concentration in $\mu\text{g}/\text{m}^3$		
		SO <sub>2</sub>	NO <sub>2</sub>	PM <sub>10</sub>
	Solapur	13	35	74
	Thane	28	58	117
	Ulhasnagar	22	56	107
	Jalna	12	31	118
	Akola	7	8	128
	Nanded	50	48	167
Meghalaya	Byrnihat	25	13	122
	Dawki	2	11	36
	Umiam	2	13	84
	Tura	2	5	30
	Nongstoin	2	10	26
	Shillong	2	13	59
Mizoram	khliehriat	2	5	36
	Aizawl	2	8	44
	Lunglei	2	5	42
	Kolasib	2	5	33
Nagaland	Champhai	2	5	34
	Dimapur	2	8	122
Orissa	Kohima	2	5	93
	Angul	10	24	102
	Balasore	4	12	82
	Berhampur	2	18	54
	Puri	2	17	94
	Bhubneshwar	2	17	81
	Cuttack	3	30	81
	Rayagada	4	21	50
	Paradeep	15	13	108
	Rourkela	8	13	100
	Sambalpur	4	17	77
	Talcher	10	25	135
	Konark	2	13	88
Punjab	Kalinga Nagar	2	10	100
	Amritsar	11	30	148
	Bhatinda	9	23	158
	DeraBassi	5	15	96
	Faridkot	5	13	90
	Pathankot/Dera Baba	7	13	77
	Gobindgarh	7	36	130
	Jalandhar	14	26	151
	Khanna	10	22	122
	Ludhiana	11	27	139
	NayaNangal	5	12	83
	Patiala	5	15	110
	Sangrur	5	13	100
Puducherry	Hoshiarpur	6	13	72
	Karaikal	13	9	35
	Puducherry	6	12	35
Rajasthan	Alwar	10	26	180
	Jaipur	7	36	171
	Jodhpur	6	24	152
	Kota	6	34	134
	Udaipur	6	33	156
Tamilnadu	Chennai	12	20	59
	Coimbatore	4	25	47
	Madurai	13	25	64
	Salem	9	28	54
	Tuticorin	13	18	91
	Trichy	13	18	85
	Mettur	8	24	49
	cuddalore	10	20	57
Telangana	Hydrabad	4	23	93
	Karimnagar	7	15	64
	Khammam	5	12	60
	Nalgonda	7	25	76
	SANGAREDDY	6	21	70
	Kothur	9	17	106
	RC Puram / Patencheru	6	25	85
	Ramagundam	7	15	67
Warangal	5	12	58	

State	City	Annual average Concentration in $\mu\text{g}/\text{m}^3$		
		SO <sub>2</sub>	NO <sub>2</sub>	PM <sub>10</sub>
Uttar Pradesh	Agra	4	22	186
	Allahabad	3	33	251
	Anpara	18	27	136
	Bareilly	12	23	240
	Firozabad	9	30	194
	Gajraula	16	31	177
	Ghaziabad	23	37	260
	Jhansi	8	22	119
	Kanpur	6	36	196
	Khurja	23	23	167
	Lucknow	8	28	169
	Moradabad	13	27	168
	Noida	9	29	154
	Varanasi	19	33	145
	Unnao	20	29	119
Raebareli	11	17	157	
Gorakpur	18	32	139	
Uttarakhand	Dehradun	27	30	188
	Haldwani	@	@	138
	Haridwar	24	27	123
	Kashipur	@	@	107
	Rishikesh	25	29	121
	Rudrapur	@	@	125
West Bengal	Asansol	8	55	97
	Barrackpore	8	58	113
	Durgapur	8	55	101
	Haldia	3	17	87
	Howrah	15	43	123
	Kolkata	7	56	105
	Raniganj	8	56	114
South Suburban	3	37	90	

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  $\mu\text{g}/\text{m}^3$ , (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  $\mu\text{g}/\text{m}^3$ , (Ecologically sensitive area)

@-data not available

### Ambient air quality in cities during 2016

State	City	Annual average Concentration in $\mu\text{g}/\text{m}^3$		
		SO <sub>2</sub>	NO <sub>2</sub>	PM <sub>10</sub>
Andhra Pradesh	Anantapur	5	13	85
	Chittoor	6	27	62
	Eluru	5	30	70
	Guntur	5	29	88
	Kadapa	7	15	68
	Kakinada	8	18	64
	Kurnool	5	11	69
	Nellore	5	28	66
	Prakasam	5	29	65
	Rajahmundry	8	18	64
	Srikakulam	9	20	71
	Tirupati	6	12	59
	Vijaywada	6	44	102
Vishakhapatnam	8	18	77	

State	City	Annual average Concentration in $\mu\text{g}/\text{m}^3$		
		SO <sub>2</sub>	NO <sub>2</sub>	PM <sub>10</sub>
	Vizianagaram	9	21	85
Assam	Bongaigaon	6	13	55
	Daranga	7	14	71
	Dibrugarh	8	17	81
	Golaghat	7	14	83
	Guwahati	8	17	105
	Lakhimpur	8	16	84
	Margherita	8	17	76
	Nagaon	7	15	111
	Nalbari	7	17	108
	Sibsagar	8	13	75
	Silchar	6	13	58
	Tezpur	8	17	68
	Tinsukia	8	16	80
Bihar	Patna	4	32	212
Chandigarh	Chandigarh	2	21	105
Chattisgarh	Bhillai	9	23	108
	Bilaspur	5	21	97
	Korba	12	19	58
	Raipur	12	31	148
Dadra & Nagar Haveli	Silvassa	21	32	73
Daman & Diu	Daman	19	29	68
Delhi	Delhi	7	66	278
Goa	Amona	5	11	72
	Assanora	5	11	62
	Bicholim	5	12	70
	Codli	5	11	64
	Cuncolim	10	15	67
	Curcholem	6	11	49
	Honda	5	10	65
	Kundaim	5	10	62
	Mapusa	3	11	117
	Margao	5	11	69
	Mormugao	5	8	115
	Panaji	4	11	68
	Ponda	5	11	68
	Sanguem	6	11	44
	Tilamol	6	11	46
	Tuem	4	9	61
	Usgao	5	11	64
Vasco	5	11	90	
Gujarat	Ahmedabad	14	27	108
	Anklesvar	12	21	104
	Jamnagar	13	24	92
	Rajkot	13	21	92
	Surat	13	22	92
	Vadodara	14	23	92
	Vapi	13	24	104
Himachal Pradesh	Baddi	2	21	90
	Damtal	2	11	84
	Dharamshala	2	8	41
	Kala Amb	3	14	128
	Manali	2	8	52
	Nalagarh	2	22	108
	Paonta Sahib	2	12	101
	Parwanoo	2	10	69
	Shimla	4	17	54
	Sunder Nagar	2	11	92
Una	2	5	69	
Jammu & Kashmir	Jammu	4	17	131
Jharkhand	Dhanbad	15	37	226

State	City	Annual average Concentration in $\mu\text{g}/\text{m}^3$		
		SO <sub>2</sub>	NO <sub>2</sub>	PM <sub>10</sub>
	Jamshedpur	36	45	136
	Jharia	16	38	280
	Ranchi	20	37	196
	SaraikelaKharsawan	37	47	143
	Sindri	13	34	143
	West Singhbhum	16	22	93
Karnataka	Bagalkote	2	11	59
	Bangalore	3	31	103
	Belgaum	2	16	112
	Bijapur	2	12	93
	Chitradurga	3	20	41
	Devanagere	4	8	94
	Gulbarga	@	@	60
	Hassan	6	19	26
	Hubli-Dharwad	5	20	84
	Kolar	2	26	62
	Mandya	3	20	20
	Mangalore	7	9	40
	Mysore	3	20	47
	Raichur	5	14	83
	Shimoga	3	6	42
Timukuru	2	35	136	
Kerala	Alappuzha	2	5	42
	Kochi	2	20	48
	Kollam	4	8	46
	Kottayam	4	17	54
	Kozhikode	2	18	51
	Malapuram	2	17	37
	Palakkad	2	9	41
	Pathanamthitta	2	15	26
	Thiruvananthapuram	10	25	53
	Thissur	2	5	54
Wayanad	2	5	39	
Lakshadweep	Kavaratti	@	@	30
Madhya Pradesh	Amlai	17	22	73
	Bhopal	3	15	89
	Chhindwara	9	31	80
	Dewas	16	22	89
	Gwalior	10	14	96
	Indore	11	20	95
	Jabalpur	10	23	71
	Katni	@	@	68
	Nagda	19	22	64
	Prithampur	9	19	93
	Sagar	2	12	79
	Satna	3	6	71
	Singrauli	18	24	82
Ujjain	13	16	90	
Maharashtra	Akola	8	9	126
	Amravati	12	13	100
	Aurangabad	14	39	92
	Badlapur	25	72	125
	Bhiwandi	33	45	67
	Chandrapur	5	26	111
	Dombivali/Ambarnath	26	76	128
	Jalgaon	13	35	103
	Jalna	12	31	109
	Kolhapur	21	39	96
	Latur	5	18	81
	Mumbai	6	30	119
	Nagpur	16	26	118
Nanded	49	48	161	



State	City	Annual average Concentration in $\mu\text{g}/\text{m}^3$		
		SO <sub>2</sub>	NO <sub>2</sub>	PM <sub>10</sub>
	Nashik	13	27	85
	Navi Mumbai	19	46	118
	Pimpri-Chinchwad	32	71	105
	Pune	28	78	107
	Sangli	10	39	83
	Solapur	13	35	74
	Thane	18	60	122
	Ulhasnagar	26	71	118
Manipur	Imphal	@	@	29
Meghalaya	Byrnihat	42	17	175
	Dawki	2	11	35
	Khliehriat	2	10	47
	Nongstoin	2	11	33
	Shillong	2	14	55
	Tura	2	9	31
	Umiam	2	14	108
Mizoram	Aizawl	2	7	60
	Champhai	2	4	29
	Kolasib	2	5	30
	Lunglei	2	4	33
Nagaland	Dimapur	2	11	121
	Kohima	2	5	90
Odisha	Angul	8	23	97
	Balasore	4	12	85
	Berhampur	2	19	58
	Bhubneshwar	2	20	105
	Cuttack	3	30	81
	Jharsuguda	13	20	87
	Kalinga Nagar	2	9	113
	Konark	2	13	95
	Paradeep	22	13	111
	Puri	2	14	94
	Rayagada	4	21	59
	Rourkela	8	13	75
	Sambalpur	4	17	79
	Talcher	10	24	105
Puducherry	Karaikal	12	10	38
	Puducherry	6	14	40
Punjab	Amritsar	12	29	194
	Bhatinda	5	14	121
	DeraBassi	5	12	98
	Faridkot	5	12	104
	Gobindgarh	7	34	124
	Jalandhar	13	23	186
	Khanna	9	19	114
	Ludhiana	11	25	139
	NayaNangal	5	12	91
	Pathankot/Dera Baba	8	14	89
	Patiala	5	13	106
	Sangrur	5	13	90
Rajasthan	Alwar	8	32	144
	Bharatpur	9	30	159
	Bhiwadi	8	28	264
	Jaipur	8	33	199
	Jodhpur	6	23	168
	Kota	7	30	109
	Udaipur	6	32	138
Sikkim	Chungthang	9	8	26
	Gangtok	12	28	28
	Mangan	8	6	20
	Namchi	12	5	23
	Pelling	13	9	20

State	City	Annual average Concentration in $\mu\text{g}/\text{m}^3$		
		SO <sub>2</sub>	NO <sub>2</sub>	PM <sub>10</sub>
	Rangpo	17	9	54
	Ravangla	10	8	22
	Singtam	14	9	44
Tamilnadu	Chennai	10	18	65
	Coimbatore	6	24	59
	Cuddalore	12	17	48
	Madurai	15	24	76
	Mettur	7	21	53
	Salem	7	25	51
	Trichy	12	20	95
	Tuticorin	14	22	175
Telangana	Adilabad	5	19	63
	Hyderabad	4	27	100
	Karimnagar	7	24	60
	Khammam	7	21	55
	Kothur	9	32	78
	Nalgonda	6	26	61
	Nizamabad	5	19	63
	Patencheru	6	25	78
	Ramagundam	8	8	69
	Sangareddy	5	24	70
Warangal	7	23	70	
Uttar Pradesh	Agra	5	22	198
	Allahabad	4	37	196
	Anpara	19	29	132
	Bareilly	12	22	253
	Firozabad	9	33	223
	Gajraula	20	33	193
	Ghaziabad	15	28	235
	Gorakhpur	18	35	154
	Jhansi	7	21	116
	Kanpur	7	39	217
	Khurja	22	21	216
	Lucknow	8	27	214
	Mathura	11	29	171
	Meerut	7	55	157
	Moradabad	18	31	196
	Noida	8	33	176
	Raebareli	11	17	141
	Saharanpur	15	25	218
Unnao	10	28	119	
Varanasi	11	32	256	
Uttarakhand	Dehradun	26	29	241
	Haldwani	@	@	128
	Haridwar	25	28	129
	Kashipur	@	@	126
	Rishikesh	23	27	119
Rudrapur	@	@	142	
West Bengal	Asansol	13	42	211
	Barrackpore	8	55	106
	Durgapur	13	41	196
	Haldia	18	42	103
	Howrah	10	59	119
	Kolkata	4	49	113
	Raniganj	13	42	217
	Sankrail	7	40	88
South Suburban	4	38	113	

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  $\mu\text{g}/\text{m}^3$ , (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  $\mu\text{g}/\text{m}^3$ , (Ecologically sensitive area)  
@-data not available



**Annexure-II**

**State-wise number of polluted river stretches and cities/towns located along the respective polluted river stretch.**

<b>Name of State/UT</b>	<b>Cities/Towns along Polluted River Stretches (2017)</b>	<b>Number of Polluted River stretches (2017)</b>
Andhra Pradesh	10	5
Assam	50	31
Bihar	22	15
Chhattisgarh	11	3
Daman & Diu	2	1
Delhi	1	1
Goa	21	15
Gujarat	27	14
Haryana	7	2
Himachal Pradesh	10	6
Jammu and Kashmir	16	7
Jharkhand	10	6
Karnataka	23	16
Kerala	34	23
Madhya Pradesh	41	20
Maharashtra	170	56
Manipur	4	3
Meghalaya	7	7
Nagaland	4	3
Odisha	31	18
Punjab	5	2
Rajasthan	5	1
Sikkim	9	3
Tamil Nadu	24	8
Telangana	19	9
Tripura	4	2
Uttar Pradesh	36	13
Uttarakhand	11	9
West Bengal	44	17
<b>Total</b>	<b>659</b>	<b>317</b>

## Revised National Ambient Air Quality Standards (NAAQS)

[NAAQS Notification dated 18<sup>th</sup> November, 2009]

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

**Annexure-IV****Primary Water Quality Criteria for Bathing**

<b>S. No.</b>	<b>CRITERIA</b>	<b>RATIONALE</b>
1	Faecal Coliform: 500 (Desirable) MPN/100ml: 2500 (Maximum Permissible)  Faecal Streptococci: 100 (Desirable) : 500 (Maximum Permissible)	To ensure low sewage contamination. Faecal coliform and faecal streptococci are considered as they reflect the bacterial pathogenicity. The desirable and permissible limits are suggested to allow for fluctuation in environmental conditions such as seasonal changes, changes in flow conditions etc.
2	Dissolved Oxygen: 5 mg/l or more	The minimum dissolved oxygen concentration of 5 mg/l ensures reasonable freedom from oxygen consuming organic pollution immediately U/s which is necessary for preventing production of anaerobic gases (obnoxious gases) from sediments
3	Biochemical Oxygen Demand (3 day@27°C) : 3 mg/l or less	The Biochemical Oxygen Demand of 3 mg/l or less of the water ensures reasonable freedom from oxygen demanding pollutants and prevent production of obnoxious gases.