Ambient Air Quality Data of Bengaluru CAAQM Stations

For the month of April, 2022

Summer AQI Bulletin

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#೪೯, ಪರಿಸರ ಭವನ, ಚರ್ಚ್ ಸ್ಟ್ರೀಟ್, ಬೆಂಗಳೂರು-ಜಿಟಿ೦ ೦೦೧.

Karnataka State Pollution Control Board

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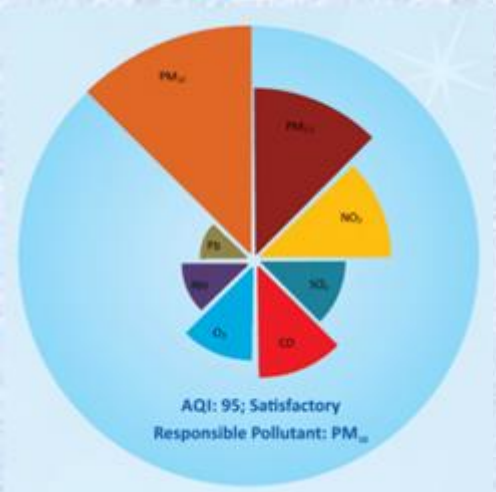
I N D E X

Background: Ambient Air Quality of Bengaluru

The Ministry of Environment, Forest and Climate Change, GoI has launched the Natiional Clean Air Programme(NCAP) to tackle the Air Pollution Across the country in a comprehensive manner. 132 cities have been identified, of which 4 cities are in Karnataka, viz., Bengaluru, Hubli-Dharwad, Davangere and Kalaburgi. 44 Action points have been prepared for Bengaluru and got it approved from CPCB.

The various component contributing for Air Pollution are 1) Vehicular Movements, 2) Re-suspension of Road dust, 3) Industries, 4) C&D Waste, 5) Biomass burning, 6) Outside eateries and 7) DG Sets. In order to access the sectorwise contribution, Source Apportionment and Emission Inventory studies have been carried out by CSTEP for Bengaluru City. The study reveals that Vehicular movements and Re-suspension of Road Dust are the major contributors for air pollution in Bengaluru City. The action plan is being effectively implemented such as Improvements of Roads and filling up of potholes, Use of Mechanical sweepers in Urban areas, Use of water sprinklers to suppress dust pollution, direction have also been issued to control stubble burning. Switching on CNG & Bio-fuel, Strengthening of e-charging points for battery operated vehicles, Encouraging use of Mass transportations.

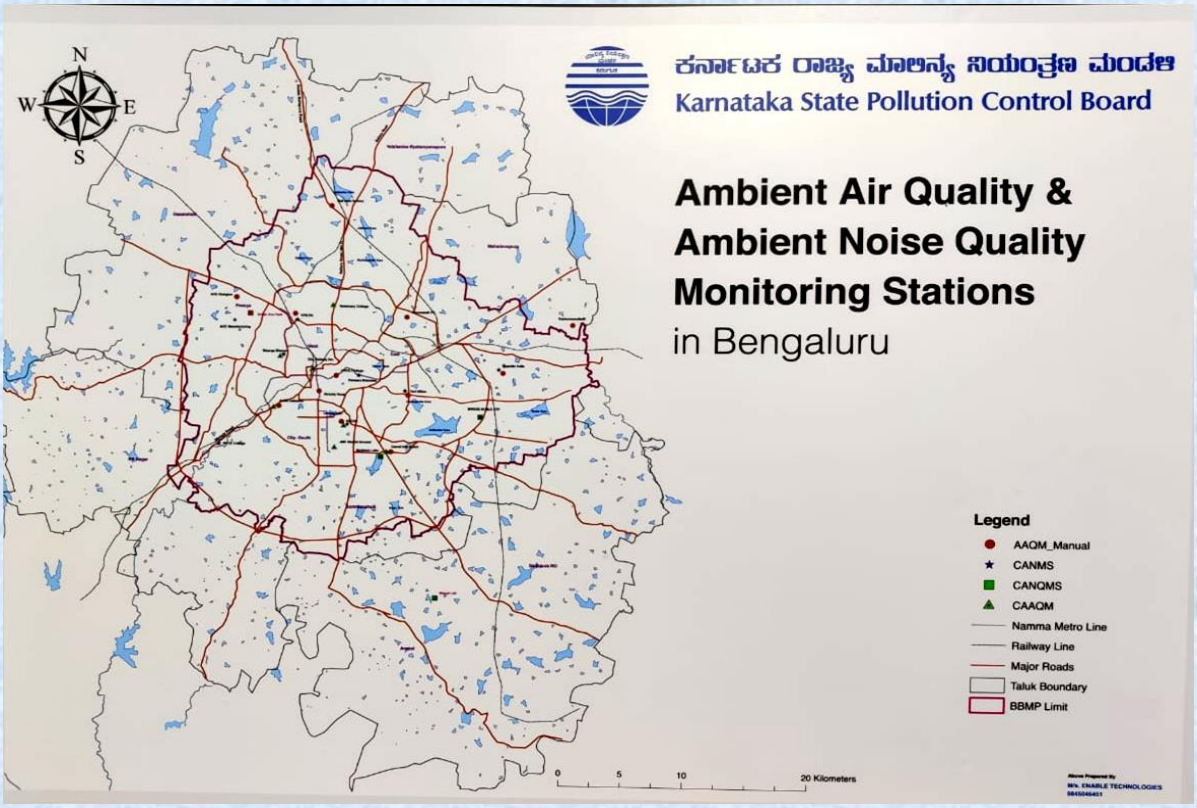
Further, in order to analyse the trend and concentration of air pollutants in the atmosphere over a period of time and thus enabling the stakeholders to take up mitigative measure, AQI bulletin serves as a reference guide in understanding the air quality of Bengaluru city in 3 different seasons. The ambient air quality data of Continuous Ambient Air quality Monitoring Stations(CAAQMS) operated by KSPCB for the period April-2022 are compiled and presented in this report. The KSPCB is also regularly disseminating Air quality data through its website, regularly sending SMS to stake holders, media, etc., put up display board at prominent locations.



Air Quality Index

Site map of CAAQM stations operated by KSPCB in Bengaluru

CAAQM Stations: Hebbal, Jayanagar, KAVIKA, NIMHANS, Silkboard, Nisarga Bhavan (Basaveshwaranagar) & City Railway Station(CRS)



Parameter-wise data tables of CAAQM Stations

I) Hebbal

Continuous Ambient Air Quality Monitoring Station Hebbal, Monthly Report of Ambient Air Quality, April-2022

Date	CO (mg/m³)	Ozone (µg/m³)	NO2 (µg/m³)	NH3 (µg/m³)	SO2 (µg/m³)	PM2.5 (µg/m³)	PM10 (µg/m³)	BEN. (µg/m³)	AT (°C)	RH (%)	WS (m/s)	WD (deg)	BP (mmHg)	AQI	Prominent Pollutant
01-04-2022	0.36	23.3	7.2	2.2	4.4	47.9	94.9	0.1	26.1	66	0.7	163	707	95	PM10
02-04-2022	0.39	22.0	8.5	2.1	5.0	45.1	94.3	0.1	26.3	60	0.7	151	708	94	PM10
03-04-2022	0.37	22.1	8.6	2.2	3.6	42.7	87.4	0.1	26.9	56	0.8	125	708	87	PM10
04-04-2022	0.41	28.7	13.2	3.3	4.5	49.3	99.5	0.1	27.3	54	1.0	126	708	100	PM10
05-04-2022	0.37	21.3	10.4	1.9	6.5	39.5	89.9	0.1	27.0	53	1.1	133	710	90	PM10
06-04-2022	0.37	22.1	11.7	2.1	6.5	48.1	105.2	0.1	27.7	49	1.0	130	710	103	PM10
07-04-2022	0.36	22.0	11.4	2.0	6.1	47.2	101.5	0.1	27.9	50	1.0	126	709	101	PM10
08-04-2022	0.42	21.5	10.0	2.0	5.8	30.1	73.4	0.1	27.6	55	1.1	129	708	73	PM10
09-04-2022	0.39	21.1	10.5	1.9	6.5	25.7	66.9	0.1	27.7	55	1.1	130	707	67	PM10
10-04-2022	0.39	21.0	9.2	1.5	6.5	22.0	59.8	0.1	26.9	57	0.9	131	707	60	PM10
11-04-2022	0.38	20.6	10.2	1.5	6.1	20.6	59.2	0.1	28.0	54	1.1	115	706	59	PM10
12-04-2022	0.42	19.9	10.0	1.3	5.7	15.4	53.0	0.1	27.8	57	1.0	124	705	53	PM10
13-04-2022	0.38	19.5	8.7	1.2	5.8	14.0	38.5	0.1	25.0	72	0.9	126	705	39	PM10
14-04-2022	0.43	21.9	7.6	1.3	5.3	17.5	42.1	0.1	24.3	74	0.7	153	706	42	PM10
15-04-2022	0.46	25.7	7.2	1.3	5.5	16.5	38.4	0.1	24.4	70	0.7	148	706	38	PM10
16-04-2022	0.37	24.0	6.0	1.6	5.3	23.6	48.1	0.1	24.8	70	0.7	145	705	48	PM10
17-04-2022	0.38	24.2	6.4	1.9	4.4	33.3	58.0	0.1	25.7	67	0.7	145	706	58	PM10
18-04-2022	0.36	23.1	5.5	1.7	6.5	17.0	33.8	0.1	24.5	69	0.9	164	707	34	PM10
19-04-2022	0.41	23.4	8.4	1.6	4.3	29.0	58.0	0.1	25.4	65	0.6	119	708	58	PM10
20-04-2022	0.43	23.0	11.2	1.5	5.1	44.0	91.6	0.1	27.6	56	0.7	111	706	92	PM10
21-04-2022	0.34	25.2	11.0	1.9	3.7	55.7	113.7	0.1	28.2	56	0.8	129	706	109	PM10
22-04-2022	0.38	24.1	10.9	1.8	4.0	49.8	95.7	0.1	27.5	57	0.9	127	707	96	PM10
23-04-2022	0.41	21.8	10.3	1.3	4.8	29.5	64.6	0.1	26.7	60	0.9	125	707	65	PM10
24-04-2022	0.36	21.4	9.3	1.1	4.9	22.3	61.8	0.1	27.9	54	0.8	125	706	62	PM10
25-04-2022	0.43	24.4	10.3	1.4	5.5	43.1	94.2	0.1	28.1	55	0.7	134	706	94	PM10
26-04-2022	0.41	24.1	9.9	1.4	5.6	40.1	89.2	0.1	28.1	54	0.7	124	706	89	PM10
27-04-2022	0.40	22.6	12.5	1.4	5.8	45.2	110.7	0.1	29.2	50	0.9	127	706	107	PM10
28-04-2022	0.43	28.2	10.4	1.5	6.2	43.7	97.4	0.1	28.3	55	0.7	150	707	97	PM10
29-04-2022	0.37	25.9	10.3	1.5	5.4	43.2	94.8	0.1	29.0	47	0.8	140	707	95	PM10
30-04-2022	0.39	27.6	6.9	0.9	6.2	39.3	73.3	0.1	27.7	57	0.8	169	706	73	PM10
Average	**0.39**	**23.2**	**9.5**	**1.7**	**5.4**	**34.7**	**76.3**	**0.1**	**27.0**	**58**	**0.9**	**135**	**707**	*	*
Minimum	0.34	19.5	5.5	0.9	3.6	14.0	33.8	0.1	24.3	47	0.6	111	705	*	*
Maximum	0.46	28.7	13.2	3.3	6.5	55.7	113.7	0.1	29.2	74	1.1	169	710	*	*

II) Jayanagar

Continuous Ambient Air Quality Monitoring Station of Jayanagar, Monthly Report of Ambient Air Quality, April-2022

Date	CO mg/m³	Ozone µg/m³	NO2 µg/m³	NH3 µg/m³	SO2 µg/m³	PM2.5 µg/m³	PM10 µg/m³	BEN µg/m³	AT °C	RH %	WS m/s	WD deg.	BP mmHg	AQI	Prominent Pollutant
01-04-2022	0.41	40.7	12.0	3.6	5.0	45.8	82.7	0.14	25.5	67	1.2	215	708	83	PM_{10}
02-04-2022	1.45	29.1	41.5	2.9	6.1	72.3	143.7	0.27	26.2	44	0.4	154	709	141	$PM_{2.5}$
03-04-2022	0.59	34.4	35.9	3.1	5.0	42.8	79.4	0.16	26.6	55	0.7	159	709	79	PM_{10}
04-04-2022	0.68	31.9	49.9	3.1	5.5	53.0	101.6	0.17	26.6	53	0.7	128	709	101	PM_{10}
05-04-2022	0.70	26.0	39.9	3.3	5.3	43.6	110.3	0.15	26.7	53	0.7	138	711	107	PM_{10}
06-04-2022	0.74	33.2	36.3	3.2	5.1	51.8	124.0	0.18	27.3	49	0.7	159	711	116	PM_{10}
07-04-2022	0.88	35.3	33.8	3.3	5.0	50.0	112.3	0.20	27.8	49	0.7	153	710	108	PM_{10}
08-04-2022	1.00	24.8	41.9	3.1	6.0	35.7	102.2	0.17	28.5	54	0.7	136	709	101	PM_{10}
09-04-2022	0.83	23.9	42.3	3.1	5.4	33.2	85.7	0.17	28.5	55	0.7	144	708	86	PM_{10}
10-04-2022	0.93	21.0	42.2	4.2	5.7	28.1	84.5	0.17	26.8	59	0.7	155	708	85	PM_{10}
11-04-2022	0.89	19.9	40.9	6.4	5.1	24.4	82.9	0.15	29.3	56	0.6	134	707	83	PM_{10}
12-04-2022	1.03	14.7	26.4	6.7	6.2	19.0	69.7	0.17	31.7	44	0.7	141	706	70	PM_{10}
13-04-2022	0.88	9.4	35.9	6.4	5.7	16.0	45.8	0.12	25.6	70	0.7	166	706	46	PM_{10}
14-04-2022	0.47	24.0	29.5	6.7	5.6	14.8	36.5	0.10	25.4	70	1.0	208	706	37	PM_{10}
15-04-2022	1.31	31.6	50.1	8.3	6.6	31.4	65.0	0.20	27.8	57	0.7	176	706	66	CO
16-04-2022	0.69	31.4	48.7	6.3	5.5	27.7	51.9	0.15	24.5	71	0.8	202	706	61	NO_2
17-04-2022	0.76	28.6	31.7	6.6	5.3	39.8	60.0	0.15	24.6	73	0.8	216	706	66	$PM_{2.5}$
18-04-2022	0.32	32.1	13.4	6.5	4.8	23.6	38.7	0.08	25.1	68	1.1	221	708	39	PM_{10} & $PM_{2.5}$
19-04-2022	1.21	17.7	24.0	6.3	5.6	46.5	107.6	0.26	27.0	54	0.6	218	709	105	PM_{10}
20-04-2022	1.06	24.5	25.8	6.2	6.3	54.1	104.5	0.19	29.1	52	0.6	164	707	103	PM_{10}
21-04-2022	0.79	30.2	18.4	6.5	5.1	60.4	110.9	0.15	29.3	53	0.7	154	707	107	PM_{10}
22-04-2022	0.89	30.7	22.3	2.8	6.5	54.2	95.5	0.13	28.0	57	0.7	150	708	96	PM_{10}
23-04-2022	0.33	19.6	24.6	2.6	5.8	36.2	60.5	0.08	24.9	71	0.8	152	709	61	PM_{10}
24-04-2022	0.92	35.3	14.0	2.9	6.0	33.1	80.5	0.14	31.8	40	0.8	148	707	81	PM_{10}
25-04-2022	0.65	41.0	12.4	3.1	6.5	47.8	92.1	0.15	29.5	51	0.8	169	707	92	PM_{10}
26-04-2022	1.00	38.5	13.8	2.9	5.7	49.3	96.0	0.16	29.6	51	0.7	166	707	96	PM_{10}
27-04-2022	0.68	38.5	11.9	3.3	5.6	47.0	96.2	0.17	30.2	52	0.8	166	707	96	PM_{10}
28-04-2022	1.52	37.2	10.3	3.3	7.2	49.9	110.9	0.17	32.9	41	0.8	179	707	107	PM_{10}
29-04-2022	1.39	44.7	12.4	3.1	7.1	49.4	103.0	0.18	30.0	47	0.9	184	708	102	PM_{10}
30-04-2022	0.72	51.2	5.1	3.3	5.2	45.5	73.6	0.12	27.6	57	1.2	220	707	76	$PM_{2.5}$
Average	**0.86**	**30.0**	**28.2**	**4.4**	**5.7**	**40.9**	**86.9**	**0.16**	**27.8**	**56**	**0.8**	**169**	**708**	*	*
Maximum	1.52	51.2	50.1	8.3	7.2	72.3	143.7	0.27	32.9	73	1.2	221	711	*	*
Minimum	0.32	9.4	5.1	2.6	4.8	14.8	36.5	0.08	24.5	40	0.4	128	706	*	*

III) KAVIKA

Continuous Ambient Air Quality Monitoring Station of KAVIKA, Monthly Report of Ambient Air Quality, April-2022

Date	CO mg/m³	Ozone µg/m³	NO2 µg/m³	NH3 µg/m³	SO2 µg/m³	PM2.5 µg/m³	PM10 µg/m³	BEN µg/m³	AT °C	RH %	WS m/s	WD deg.	BP mmHg	AQI	Prominent Pollutant
01-04-2022	0.80	5.5	14.7	27.3	6.2	54.3	95.7	0.09	27.6	64	1.0	147	718	96	PM_{10}
02-04-2022	0.73	5.3	11.9	23.4	5.4	52.8	80.9	0.08	28.1	57	0.9	124	719	88	$PM_{2.5}$
03-04-2022	0.69	5.2	10.7	23.4	6.0	59.8	88.8	0.08	28.6	54	0.8	113	718	100	$PM_{2.5}$
04-04-2022	0.71	5.1	12.8	26.9	6.2	67.8	93.7	0.08	29.2	49	0.7	90	719	126	$PM_{2.5}$
05-04-2022	0.67	5.1	11.2	26.7	5.8	58.0	83.9	0.07	28.8	50	0.7	97	721	58	PM_{10}
06-04-2022	0.74	5.3	14.8	28.7	5.7	60.3	98.3	0.08	29.6	45	0.7	99	721	101	$PM_{2.5}$
07-04-2022	0.90	5.3	16.3	34.9	6.2	62.3	108.1	0.10	29.5	48	0.8	103	720	108	$PM_{2.5}$
08-04-2022	0.76	5.6	12.1	34.9	6.5	44.5	77.9	0.09	29.5	50	0.7	85	718	78	$PM_{2.5}$
09-04-2022	0.82	5.2	12.1	35.0	5.5	40.5	71.7	0.09	29.3	51	0.7	102	718	72	$PM_{2.5}$
10-04-2022	0.85	4.4	12.1	37.5	5.2	37.7	64.0	0.09	28.6	53	0.8	105	717	64	$PM_{2.5}$
11-04-2022	0.86	4.1	14.8	45.9	5.3	47.3	74.5	0.10	29.7	50	0.6	80	716	79	$PM_{2.5}$
12-04-2022	0.76	3.4	12.1	37.0	5.5	31.0	60.3	0.08	29.7	52	0.6	79	716	60	PM_{10}
13-04-2022	0.84	4.6	11.8	29.7	5.0	25.8	57.6	0.09	26.5	68	0.8	112	715	58	PM_{10}
14-04-2022	0.64	5.0	15.2	23.9	5.2	22.7	47.3	0.07	26.2	69	0.9	139	716	47	PM_{10}
15-04-2022	-	-	-	-	-	-	-	-	-	-	-	-	-	*	*
16-04-2022	0.64	9.2	29.2	60.6	5.9	27.9	52.7	-	24.1	76	0.8	104	716	53	PM_{10}
17-04-2022	0.70	7.0	17.7	42.6	4.3	44.3	73.7	-	26.6	66	0.9	133	716	74	PM_{10} & $PM_{2.5}$
18-04-2022	1.38	6.8	20.3	40.2	5.3	39.6	67.3	-	25.6	68	1.2	187	718	69	CO
19-04-2022	1.00	6.5	27.0	44.3	5.5	49.9	99.1	-	27.4	59	0.9	138	719	99	PM_{10}
20-04-2022	0.81	6.2	26.9	41.6	4.9	70.0	112.9	0.20	29.7	51	0.8	103	717	133	$PM_{2.5}$
21-04-2022	0.62	6.1	17.2	31.7	5.1	63.4	99.1	0.18	30.3	50	0.7	98	716	111	$PM_{2.5}$
22-04-2022	-	5.9	13.3	35.1	5.7	53.0	99.2	0.21	27.5	62	0.8	112	718	99	PM_{10}
23-04-2022	-	6.1	17.1	30.0	6.2	43.6	71.5	0.17	30.6	46	0.7	101	718	73	$PM_{2.5}$
24-04-2022	-	6.1	14.0	27.1	5.5	41.4	64.2	0.14	29.4	51	0.8	117	717	69	$PM_{2.5}$
25-04-2022	-	6.7	16.1	31.3	5.0	46.2	87.8	0.16	29.8	51	0.8	115	716	87	PM_{10}
26-04-2022	-	7.9	14.5	24.3	5.3	-	-	0.00	29.9	55	0.9	130	719	*	*
27-04-2022	-	8.5	15.1	39.9	3.6	53.2	100.0	0.23	33.5	34	0.6	76	715	100	PM_{10}
28-04-2022	0.96	6.9	14.9	39.8	5.4	50.6	95.7	0.14	30.2	50	0.8	117	717	96	PM_{10}
29-04-2022	0.94	6.3	22.2	44.4	5.4	55.1	117.3	0.19	30.3	47	0.8	120	717	112	PM_{10}
30-04-2022	1.00	6.2	19.1	38.6	5.7	43.7	87.3	0.19	28.7	56	1.0	154	716	87	PM_{10}
Average	**0.82**	**5.9**	**16.1**	**34.7**	**5.5**	**48.1**	**83.2**	**0.12**	**28.8**	**54**	**0.8**	**113**	**718**	*	*
Maximum	1.38	9.2	29.2	60.6	6.5	70.0	117.3	0.23	33.5	76	1.2	187	721	*	*
Minimum	0.62	3.4	10.7	23.4	3.6	22.7	47.3	0.00	24.1	34	0.6	76	715	*	*

IV) NIMHANS

Continuous Ambient Air Quality Monitoring Station of NIMHANS, Monthly Report of Ambient Air Quality, April-2022															
Date	CO mg/m³	Ozone µg/m³	NO2 µg/m³	NH3 µg/m³	SO2 µg/m³	PM2.5 µg/m³	PM10 µg/m³	BEN µg/m³	AT °C	RH %	WS m/s	WD deg.	BP mmHg	AQI	Prominent Pollutant
01-04-2022	0.51	39.9	17.4	14.6	6.5	41.5	89.0	0.73	26.9	65	1.3	236	707	89	PM_{10}
02-04-2022	0.61	37.6	20.6	15.0	6.3	41.7	90.0	0.66	26.9	67	1.2	211	708	90	PM_{10}
03-04-2022	0.45	37.6	16.8	14.7	6.1	38.9	83.0	0.59	27.4	66	1.1	190	708	83	PM_{10}
04-04-2022	0.41	38.7	17.6	15.2	6.9	42.8	92.9	0.46	27.2	67	0.8	147	708	93	PM_{10}
05-04-2022	0.40	35.3	17.2	14.0	6.3	38.8	82.7	0.47	27.4	64	0.8	152	710	83	PM_{10}
06-04-2022	0.42	38.7	21.2	14.9	6.9	45.6	99.8	0.49	28.0	54	0.9	158	710	100	PM_{10}
07-04-2022	0.51	41.6	19.9	14.5	6.2	46.8	102.7	0.47	28.2	50	0.8	152	709	102	PM_{10}
08-04-2022	0.38	33.2	17.5	13.3	6.3	33.8	70.1	0.45	27.9	57	0.8	146	708	70	PM_{10}
09-04-2022	0.35	32.9	16.3	12.5	7.0	29.8	59.9	0.50	28.1	57	0.9	161	707	60	PM_{10}
10-04-2022	0.37	30.2	18.1	11.6	6.0	28.2	55.8	0.52	27.3	58	0.9	168	707	56	PM_{10}
11-04-2022	0.38	32.5	17.9	11.9	6.7	29.2	58.4	0.41	28.4	52	0.7	132	706	58	PM_{10}
12-04-2022	0.35	26.5	16.1	11.1	6.5	23.0	42.9	0.42	28.2	60	0.8	137	705	43	PM_{10}
13-04-2022	0.36	19.9	18.1	11.1	6.8	20.4	36.8	0.53	25.5	69	1.0	172	705	37	PM_{10}
14-04-2022	0.35	26.4	18.0	11.6	6.1	19.6	34.2	0.71	25.0	69	1.3	228	706	34	PM_{10}
15-04-2022	0.46	35.3	21.2	11.8	6.2	19.7	35.3	0.69	25.0	53	1.2	223	706	35	PM_{10}
16-04-2022	0.42	37.6	19.7	13.0	5.9	27.2	53.5	0.69	26.0	51	1.2	223	705	54	PM_{10}
17-04-2022	0.49	34.2	23.5	14.1	5.9	31.0	63.0	0.72	25.1	56	1.3	233	706	63	PM_{10}
18-04-2022	0.46	30.1	20.5	12.9	6.6	21.7	39.3	0.72	24.3	62	1.3	230	708	39	PM_{10}
19-04-2022	0.79	25.7	28.1	13.4	6.9	33.7	69.5	0.64	25.8	53	1.1	206	708	70	PM_{10}
20-04-2022	-	32.7	-	-	7.1	44.2	96.2	0.51	28.7	48	0.9	165	707	96	PM_{10}
21-04-2022	-	36.2	-	-	6.9	50.4	111.6	0.46	28.8	51	0.8	150	706	108	PM_{10}
22-04-2022	0.65	34.0	-	-	6.7	43.8	95.5	0.47	28.0	55	0.9	153	707	96	PM_{10}
23-04-2022	0.39	25.9	-	-	6.8	30.5	61.6	0.47	27.3	52	0.8	151	708	62	PM_{10}
24-04-2022	0.38	31.6	-	-	7.8	31.0	62.9	0.56	28.3	47	1.0	179	707	63	PM_{10}
25-04-2022	0.49	37.9	-	-	8.5	42.7	92.2	0.52	29.1	46	0.9	168	706	92	PM_{10}
26-04-2022	0.53	38.4	-	-	7.0	41.0	88.2	0.54	29.1	46	1.0	174	706	88	PM_{10}
27-04-2022	0.52	37.4	-	-	8.8	46.9	103.0	0.48	29.9	44	0.9	154	706	102	PM_{10}
28-04-2022	0.52	38.0	-	-	7.9	42.2	91.0	0.60	29.1	47	1.1	193	707	91	PM_{10}
29-04-2022	0.54	44.2	-	-	8.2	41.1	88.6	0.65	29.5	43	1.2	209	707	89	PM_{10}
30-04-2022	0.38	46.4	-	-	7.2	-	-	0.78	27.9	50	1.4	254	706	*	*
Average	**0.46**	**34.5**	**19.2**	**13.2**	**6.8**	**35.4**	**74.1**	**0.56**	**27.5**	**55**	**1.0**	**182**	**707**	*	*
Maximum	0.79	46.4	28.1	15.2	8.8	50.4	111.6	0.78	29.9	69	1.4	254	710	*	*
Minimum	0.35	19.9	16.1	11.1	5.9	19.6	34.2	0.41	24.3	43	0.7	132	705	*	*

V) Silkboard

Continuous Ambient Air Quality Monitoring Station Silkboard, Monthly Report of Ambient Air Quality, April-2022															
Date	CO mg/m³	Ozone µg/m³	NO2 µg/m³	NH3 µg/m³	SO2 µg/m³	PM2.5 µg/m³	PM10 µg/m³	BEN µg/m³	AT °C	RH %	WS m/s	WD deg.	BP mmHg	AQI	Prominent Pollutant
01-04-2022	0.73	42.5	24.1	18.7	5.7	75.0	124.2	0.16	26.9	62	1.3	196	712	150	$PM_{2.5}$
02-04-2022	0.55	27.4	29.5	16.2	5.7	60.8	120.4	0.13	27.0	56	1.1	161	713	114	PM_{10}
03-04-2022	0.39	27.8	32.8	11.0	5.7	50.0	91.0	0.08	27.5	54	1.2	141	712	91	PM_{10}
04-04-2022	0.34	37.9	34.4	10.1	6.0	56.7	107.0	0.08	27.5	52	1.3	109	712	105	PM_{10}
05-04-2022	0.37	33.1	32.6	11.1	6.2	48.0	96.4	0.08	27.2	52	1.4	117	714	96	PM_{10}
06-04-2022	0.41	34.6	32.1	12.6	6.5	53.1	118.8	0.09	28.1	47	1.3	120	714	113	PM_{10}
07-04-2022	0.47	37.3	33.3	11.5	6.4	54.4	127.1	0.11	28.3	47	1.3	119	713	118	PM_{10}
08-04-2022	0.36	37.7	34.6	9.5	5.9	40.6	86.3	0.08	27.7	54	1.3	108	712	86	PM_{10}
09-04-2022	0.36	36.5	33.0	10.3	6.1	41.7	87.7	0.08	27.9	55	1.3	119	712	88	PM_{10}
10-04-2022	0.43	40.9	30.0	12.1	5.8	30.3	86.3	0.10	27.5	54	1.2	130	711	86	PM_{10}
11-04-2022	0.32	37.2	32.6	10.5	5.8	31.0	82.0	0.07	28.3	53	1.3	92	711	82	PM_{10}
12-04-2022	0.29	31.8	32.3	9.9	5.7	20.5	60.8	0.07	28.0	57	1.3	99	710	61	PM_{10}
13-04-2022	0.47	29.4	26.4	13.9	5.8	28.7	59.7	0.11	25.5	68	1.2	143	710	60	PM_{10}
14-04-2022	0.52	33.8	21.0	20.2	5.7	32.0	72.3	0.12	24.9	71	1.1	193	711	72	PM_{10}
15-04-2022	0.64	36.9	18.7	24.0	5.6	30.0	75.0	0.18	25.5	64	1.0	198	711	75	PM_{10}
16-04-2022	0.67	39.3	20.8	23.2	5.6	42.2	109.6	0.15	26.2	62	1.2	205	710	106	PM_{10}
17-04-2022	0.64	40.1	26.5	19.2	5.6	65.1	117.5	0.14	25.4	67	1.0	204	710	117	$PM_{2.5}$
18-04-2022	0.74	25.8	19.7	25.2	5.6	42.4	95.4	0.16	25.1	66	1.3	215	712	95	PM_{10}
19-04-2022	0.73	27.0	25.1	23.2	5.7	47.0	120.2	0.16	27.0	56	1.0	159	712	113	PM_{10}
20-04-2022	0.52	30.3	28.5	18.2	5.7	61.5	124.0	0.12	28.9	50	1.0	122	711	116	PM_{10}
21-04-2022	0.33	35.0	35.6	11.3	5.9	73.8	122.8	0.07	28.8	52	1.2	108	711	146	$PM_{2.5}$
22-04-2022	0.34	35.4	16.9	11.9	6.1	62.1	106.0	0.07	28.0	55	1.3	112	711	107	$PM_{2.5}$
23-04-2022	0.29	31.8	19.9	11.3	6.3	44.7	72.8	0.06	27.2	59	1.3	119	712	75	$PM_{2.5}$
24-04-2022	-	-	-	-	-	-	-	-	-	-	-	-	-	*	*
25-04-2022	-	-	-	-	-	-	-	-	-	-	-	-	-	*	*
26-04-2022	-	-	-	-	-	-	-	-	-	-	-	-	-	*	*
27-04-2022	-	-	-	-	-	-	-	-	-	-	-	-	-	*	*
28-04-2022	-	-	-	-	-	-	-	-	-	-	-	-	-	*	*
29-04-2022	-	-	-	-	-	-	-	-	-	-	-	-	-	*	*
30-04-2022	-	-	-	-	-	-	-	-	-	-	-	-	-	*	*
Average	**0.47**	**34.3**	**27.8**	**15.0**	**5.9**	**47.5**	**98.4**	**0.11**	**27.1**	**57**	**1.2**	**143**	**712**	*	*
Maximum	0.74	42.5	35.6	25.2	6.5	75.0	127.1	0.18	28.9	71	1.4	215	714	*	*
Minimum	0.29	25.8	16.9	9.5	5.6	20.5	59.7	0.06	24.9	47	1.0	92	710	*	*

VI) Nisarga Bhavan

Continuous Ambient Air Quality Monitoring Station of Saneguruvanahalli, Monthly Report of Ambient Air Quality, April-2022											
Date	NO2	SO2	CO	PM10	TEMP	HR	WS	WD	SR	AQI	Prominent Pollutant
	ug/m3	ug/m3	mg/m3	ug/m3	degreC	%	m/s	degre	W/m2		
01-04-2022	12.4	17.5	0.55	32.0	28.40	86.92	0.41	237.11	290.33	32	PM_{10}
02-04-2022	12.4	17.6	0.69	31.6	29.48	85.98	0.50	196.13	301.41	32	PM_{10}
03-04-2022	12.5	11.7	0.47	31.1	29.92	87.51	0.69	136.45	287.68	31	PM_{10}
04-04-2022	12.5	2.6	0.51	31.7	30.06	87.39	0.78	133.72	296.44	32	PM_{10}
05-04-2022	12.4	6.9	0.54	31.8	29.93	87.69	0.70	149.79	282.79	32	PM_{10}
06-04-2022	12.3	9.3	0.46	31.8	30.62	87.98	0.60	163.23	292.46	32	PM_{10}
07-04-2022	12.2	11.0	0.50	31.8	30.48	88.28	0.68	150.65	284.21	32	PM_{10}
08-04-2022	12.1	8.2	0.60	33.4	30.44	88.57	0.65	143.49	288.73	33	PM_{10}
09-04-2022	12.1	10.6	0.51	31.8	30.37	88.49	0.63	178.61	269.58	32	PM_{10}
10-04-2022	12.1	11.2	0.60	30.4	29.54	88.41	0.75	162.25	264.85	30	PM_{10}
11-04-2022	12.1	8.7	0.49	32.5	30.71	88.32	0.68	131.40	286.15	33	PM_{10}
12-04-2022	12.0	9.3	0.59	30.9	30.75	88.24	0.59	132.94	300.51	31	PM_{10}
13-04-2022	12.0	10.9	0.53	32.1	26.63	88.16	0.70	184.92	277.82	32	PM_{10}
14-04-2022	12.1	20.1	0.50	31.2	25.87	88.07	0.56	239.87	251.56	31	PM_{10}
15-04-2022	12.1	8.5	0.55	33.1	27.50	87.99	0.63	257.88	257.12	33	PM_{10}
16-04-2022	12.2	12.0	0.48	31.7	26.68	87.91	0.67	257.02	257.84	32	PM_{10}
17-04-2022	12.2	24.7	0.51	33.6	27.71	87.82	0.66	254.04	340.40	34	PM_{10}
18-04-2022	12.2	16.7	0.61	37.2	26.20	87.74	0.64	263.31	283.32	37	PM_{10}
19-04-2022	12.2	17.1	0.65	34.9	28.48	87.66	0.68	237.09	279.67	35	PM_{10}
20-04-2022	12.2	15.2	0.73	31.2	31.11	87.57	0.64	146.04	292.64	37	CO
21-04-2022	12.1	13.4	0.52	33.5	30.96	87.49	0.69	134.70	282.63	34	PM_{10}
22-04-2022	11.9	15.6	0.53	28.0	30.03	87.41	0.66	144.07	285.30	28	PM_{10}
23-04-2022	11.7	14.7	0.56	8.5	29.31	87.32	0.60	162.48	283.01	28	CO
24-04-2022	11.7	12.1	0.60	7.4	30.70	87.24	0.77	181.77	292.91	30	CO
25-04-2022	11.7	11.1	0.49	11.2	30.88	87.16	0.50	220.61	278.77	30	CO
26-04-2022	11.6	15.4	0.55	24.9	31.13	87.07	0.64	181.72	281.15	28	CO
27-04-2022	11.7	18.7	0.57	27.9	32.00	86.99	0.59	160.34	306.24	29	CO
28-04-2022	11.6	20.6	0.54	26.0	30.95	86.91	0.55	220.42	307.45	27	CO
29-04-2022	11.6	19.9	0.58	27.8	31.06	86.82	0.49	224.00	306.52	29	CO
30-04-2022	11.6	14.0	0.54	27.9	29.85	86.74	0.82	263.09	310.67	28	PM_{10}
Minimum	11.6	2.6	0.46	7.4	25.87	85.98	0.41	131.40	251.56	*	*
Maximum	12.5	24.7	0.73	37.2	32.00	88.57	0.82	263.31	340.40	*	*
Average	12.1	13.5	0.55	29.0	29.59	87.60	0.64	188.30	287.34	*	*

VII) City Railway Station.

Continuous Ambient Air Quality Monitoring Station of City Railway Station, Monthly Report of Ambient Air Quality, April-2022						
Date	NO2 ug/m3	SO2 ug/m3	CO mg/m3	PM10 ug/m3	AQI	Prominent Pollutant
01-04-2022	16.6	23.7	1.83	79.5	92	CO
02-04-2022	16.6	23.7	1.83	89.5	92	CO
03-04-2022	16.6	23.7	1.83	78.5	92	CO
04-04-2022	16.5	23.7	1.83	90.2	92	CO
05-04-2022	16.5	23.7	1.82	92.2	92	PM_{10}
06-04-2022	16.5	23.7	1.83	85.7	92	CO
07-04-2022	16.5	23.7	1.84	87.3	92	CO
08-04-2022	16.5	23.7	1.84	74.1	92	CO
09-04-2022	16.5	23.7	1.83	71.5	92	CO
10-04-2022	16.6	23.7	1.84	60.9	92	CO
11-04-2022	16.6	23.7	1.83	89.5	92	CO
12-04-2022	15.8	22.7	1.75	110.0	107	PM_{10}
13-04-2022	16.5	23.7	1.82	59.9	91	CO
14-04-2022	16.6	23.7	1.84	86.7	92	CO
15-04-2022	16.5	23.6	1.83	53.8	92	CO
16-04-2022	16.5	23.8	1.83	59.1	92	CO
17-04-2022	16.6	23.7	1.83	62.0	92	CO
18-04-2022	16.5	23.7	1.84	55.4	92	CO
19-04-2022	16.5	23.7	1.83	74.9	92	CO
20-04-2022	16.5	23.7	1.84	103.5	102	PM_{10}
21-04-2022	16.6	23.7	1.83	107.2	105	PM_{10}
22-04-2022	16.5	23.7	1.83	91.0	92	CO
23-04-2022	16.6	23.8	1.83	78.0	92	CO
24-04-2022	16.6	23.7	1.83	78.2	92	CO
25-04-2022	16.6	23.6	1.83	92.5	93	PM_{10}
26-04-2022	16.6	23.7	1.83	72.8	92	CO
27-04-2022	16.6	23.7	1.83	94.6	95	PM_{10}
28-04-2022	16.6	23.6	1.84	89.1	92	CO
29-04-2022	16.5	23.7	1.84	78.0	92	CO
30-04-2022	16.5	23.7	1.84	78.0	92	CO
Minimum	15.8	22.7	1.75	53.8	*	*
Maximum	16.6	23.8	1.84	110.0	*	*
Average	16.5	23.7	1.83	80.8	*	*

Range	Category	Possible Health Impacts
0-50	Good	Minimal Impact
51-100	Satisfactory	Minor breathing discomfort to sensitive people
101-200	Moderate	May cause breathing discomfort to the people with lung disease such as asthma and discomfort to people with heart disease Children and older adults
201-300	Poor	May cause breathing discomfort to people on prolonged exposure and discomfort to people with heart disease
301-400	Very Poor	May cause respiratory illness to the people on prolonged exposure. Effect may be more pronounced in people with lung and heart diseases
> 401	Severe	May cause respiratory effects even on healthy people and serious health effect on people with lung/heart diseases

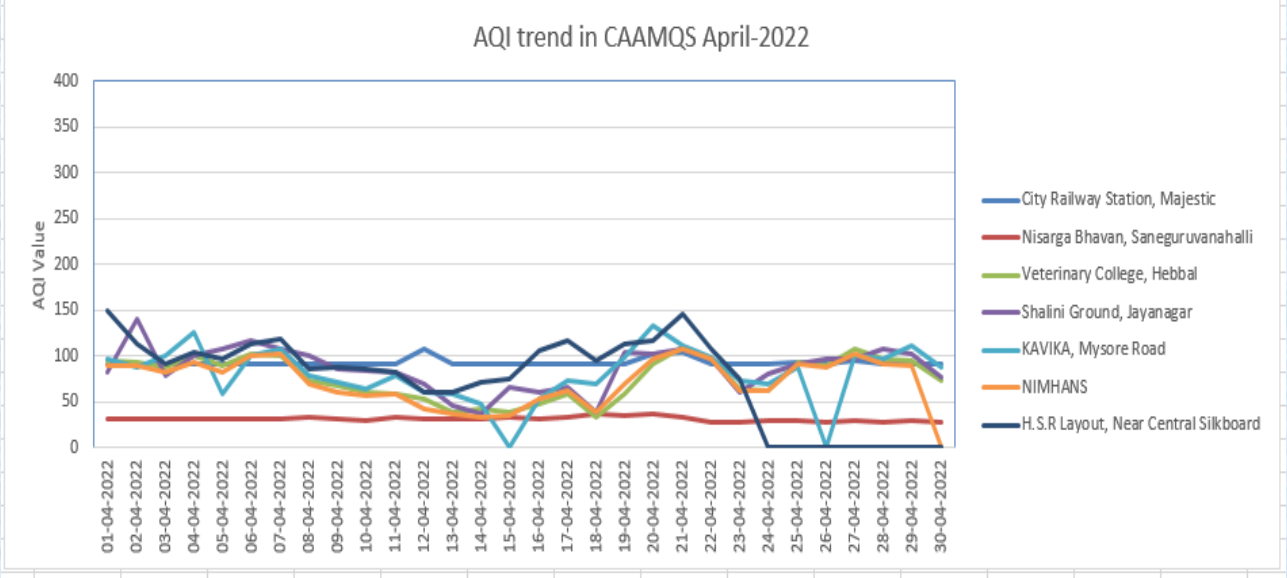
Daily AQI values of CAAQM Stations in Bengaluru(April-2022)

Daily AQI Values of Bengaluru (April-2022)							
Date/ Station Name	**City Railway Station, Majestic**	**Nisarga Bhavan, Saneguruvanahalli**	**Veterinary College, Hebbal**	**Shalini Ground, Jayanagar**	**KAVIKA, Mysore Road**	**NIMHANS**	**H.S.R Layout, Near Central Silkboard**
01-04-2022	92	32	95	83	96	89	150
02-04-2022	92	32	94	141	88	90	114
03-04-2022	92	31	87	79	100	83	91
04-04-2022	92	32	100	101	126	93	105
05-04-2022	92	32	90	107	58	83	96
06-04-2022	92	32	103	116	101	100	113
07-04-2022	92	32	101	108	108	102	118
08-04-2022	92	33	73	101	78	70	86
09-04-2022	92	32	67	86	72	60	88
10-04-2022	92	30	60	85	64	56	86
11-04-2022	92	33	59	83	79	58	82
12-04-2022	107	31	53	70	60	43	61
13-04-2022	91	32	39	46	58	37	60
14-04-2022	92	31	42	37	47	34	72
15-04-2022	92	33	38	66	*	35	75
16-04-2022	92	32	48	61	53	54	106
17-04-2022	92	34	58	66	74	63	117
18-04-2022	92	37	34	39	69	39	95
19-04-2022	92	35	58	105	99	70	113
20-04-2022	102	37	92	103	133	96	116
21-04-2022	105	34	109	107	111	108	146
22-04-2022	92	28	96	96	99	96	107
23-04-2022	92	28	65	61	73	62	75
24-04-2022	92	30	62	81	69	63	*
25-04-2022	93	30	94	92	87	92	*
26-04-2022	92	28	89	96	*	88	*
27-04-2022	95	29	107	96	100	102	*
28-04-2022	92	27	97	107	96	91	*
29-04-2022	92	29	95	102	112	89	*
30-04-2022	92	28	73	76	87	*	*
Min	**91**	**27**	**34**	**37**	**47**	**34**	**60**
Max	**107**	**37**	**109**	**141**	**133**	**108**	**150**

* Data Not Available

Good	Satisfactory	Moderate	Poor	Very Poor	Severe
(0–50)	(51–100)	(101–200)	(201–300)	(301–400)	(>401)

AQI Trend Bengaluru, April -2022



Hebbal, Jayanagara, KAVIKA, NIMHANS, Silkboard, Nisargabhavan(Basaveshwaranagara), City Railway Station(CRS)

Data Analysis of Ambient Air Quality:

- Particulate Matter(PM_{10}): Recorded within permissible limit at Saneguruvanahalli, Nisarga Bhavan. However, there is slight variation inPM_{10}values at different stations viz., City Railway Station(3 days), Hebbal(4 days), Jayanagar(10 days), KAVIKA(3 days), NIMHANS(3 days), Central Silk Board(11 days). The exceedence of $PM_{10}$is attributed due to vehicular movement and re-suspension of Road dust.

- Particulate Matter($PM_{2.5}$): Recorded within permissible as per NAAQS 2009 standards in the three monitored station viz., Hebbal, NIMHANS and City Railway Station.

- Sulphur Dioxide(SO_2): Recorded within permissible limit in all stations across Bengaluru as per NAAQS 2009 standards.

- Nitrogen Dioxide(NO_2) Recorded within permissible limit in all stations across Bengaluru as per NAAQS 2009 standards.

- Ammonia(NH_3): Observed within permissible limit in all the five monitored stations viz., Hebbal, Jayanagar, KAVIKA, NIMHANS & Silkboard as per NAAQS 2009 standards.

- Carbon Monoxide(CO): Observed 8-hourly concentration values within the permissible limits in all stations across Bengaluru as per NAAQS 2009 Standard.

- Ozone(O_3): Observed within permissible limit in all the five monitored stations viz., Hebbal, Jayanagar, KAVIKA, NIMHANS & Silkboard as per NAAQS 2009 standards.

Concentration ranges of Ambient Air Quality Parameters of Bengaluru Stations

The concentration ranges for pollutants of CAAQM stations having 24 hourly standard limits are presented in below table based on detailed tabulated date.

Table-1 Range of 24-hourly Averages for Notified Parameters monitored in April-2022, Bengaluru														
Parameters	**Hebbal**		**Jayanagar**		**KAVIKA**		**NIMHANS**		**Silkboard**		**Nisarga Bhavan**		**City Railway station**	
	MIN	**MAX**	**MIN**	**MAX**	**MIN**	**MAX**	**MIN**	**MAX**	**MIN**	**MAX**	**MIN**	**MAX**	**MIN**	**MAX**
PM_{10}(µg/m^3)	33.8	113.7	36.5	143.7	47.3	117.3	34.2	111.6	59.7	127.1	7.4	37.2	53.8	110.0
$PM_{2.5}$(µg/m^3)	14.0	55.7	14.8	72.3	22.7	70.0	19.6	50.4	20.5	75.0	*	*	*	*
SO_2(µg/m^3)	3.6	6.5	4.8	7.2	3.6	6.5	5.9	8.8	5.6	6.5	2.6	24.7	22.7	23.8
NO_2(µg/m^3)	5.5	13.2	5.1	50.1	10.7	29.2	16.1	28.1	16.9	35.6	11.6	12.5	15.8	16.6
NH_3(µg/m^3)	0.9	3.3	2.6	8.3	23.4	60.6	11.1	15.2	9.5	25.2	*	*	*	*
Note: * Parameters not monitored														
CO, Ozone and Benzene not included as there is no 24 hourly permissible limits in NAAQM														

Air Quality Index(AQI)

AQI of Bengaluru was found largely lying in Good &Satisfactory at all locations of Bengaluru. However, there was slight increase in PM_{10} values at Jayanagar, Silkboard and KAVIKA for few day and that may be due high vehicular movement and Resuspension of road dust at that particular period of time.

Table-2 AQI Values of CAAQM stations in Bengaluru for the month of April-2022								
AQI Categories	Range	Hebbal	Jayanagar	KAVIKA	NIMHANS	Silkboard (23 days)	Nisarga Bhavan	City Railway station
Good	**(0-50)**	**5**	**3**	**1**	**5**	**-**	**30**	**-**
Satisfactory	**(51-100)**	**21**	**16**	**21**	**20**	**12**	**-**	**27**
Moderate	**(101-200)**	**4**	**11**	**6**	**4**	**11**	**-**	**3**
Poor	**201-300**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Very Poor	**301-400**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Severe	(> 401)	**-**	**-**	**-**	**-**	**-**	**-**	**-**

Meteorological Parameters

Daily average wind speed was observed in the range 0.4 m/s – 1.1 m/s. Monthly average temperature was 29.59˚C with minimum daily average as 24.1˚C and maximum as 33.5˚C recorded. Monthly average relative humidity was 87.60% with maximum daily average as 88.57 % and minimum as 34% recorded.

Table-3 Monthly Range and Average for Metrological Parameters in Bengaluru, April-2022			
Parameters(Unit)*	Average	Maximum	Minimum
Wind Speed(m/s)	1.2	1.1	0.4
Temperature(°C)	29.59	33.5	24.1
Relative Humidity(%)	87.60	88.57	34

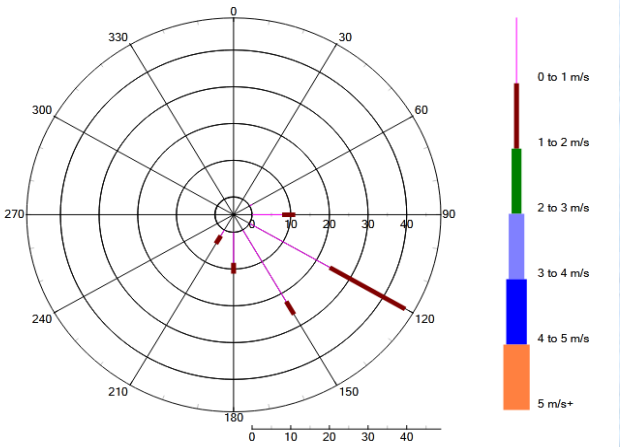
* Data of 6 Stations

Windrose diagrams: The graphical charts that characterise the speed and direction of wind at the CAAQM Stations.

Karnataka State Pollution Control Board

Continuous Ambient Air Quality Monitoring Station : Hebbal

Wind Rose — April 2022

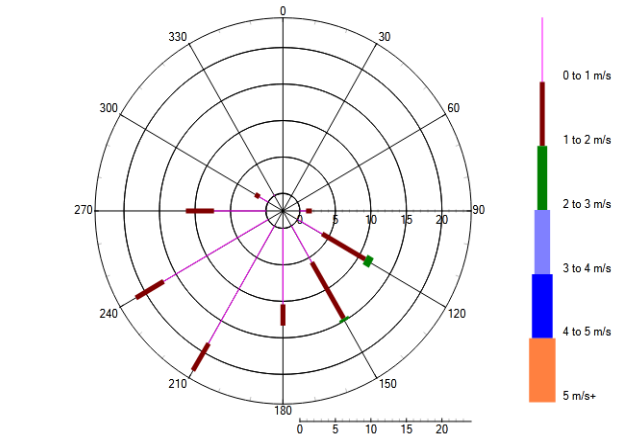


99.3% valid data present

Karnataka State Pollution Control Board

Continuous Ambient Air Quality Monitoring Station : Silkboard

Wind Rose — April 2022

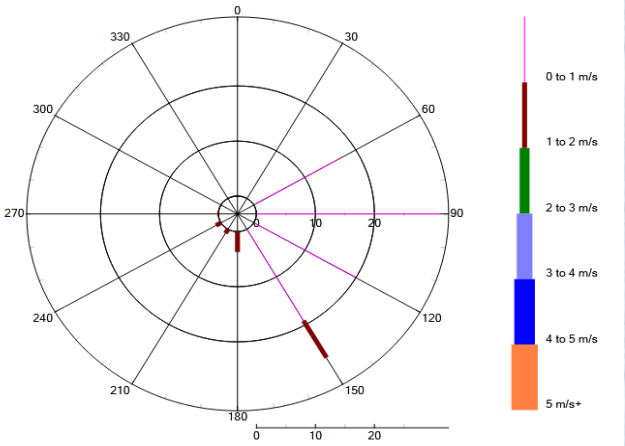


98.8% valid data present

Karnataka State Pollution Control Board

Continuous Ambient Air Quality Monitoring Station : KAVIKA

Wind Rose — April 2022

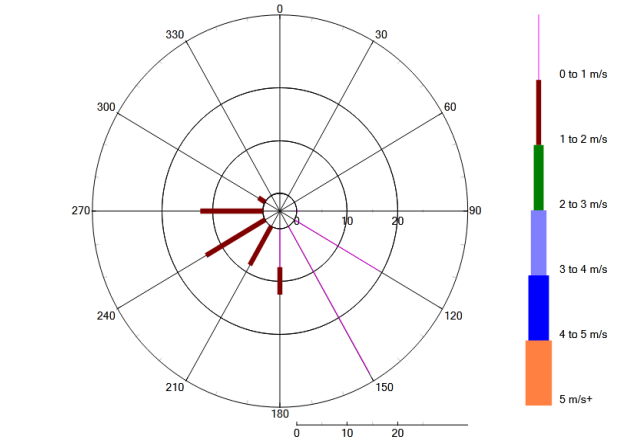


86.3% valid data present

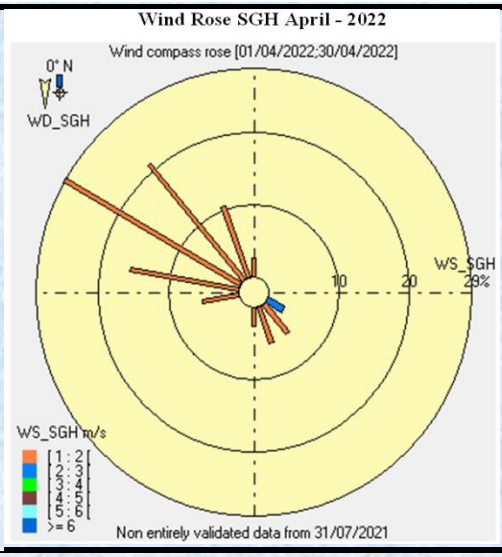
Karnataka State Pollution Control Board

Continuous Ambient Air Quality Monitoring Station : NIMHANS

Wind Rose — April 2022



99.7% valid data present



INFERENCE: The overall air quality in Bengaluru was Good and Satisfactory.

CAAQM STATIONS- Parameters Monitored

Sl. No.	Stations	Types of activities around location (Residential/Commercial/ Traffic/Industrial)	Parameters Monitored
1	Hebbal	Sensitive	SO_2, NO_2, PM_{10}, $PM_{2.5}$, NH_3, CO, O_3, Benzene& Meteorological parameters
2	Jayanagar	Commercial	SO_2, NO_2, PM_{10}, $PM_{2.5}$, NH_3, CO, O_3, Benzene& Meteorological parameters
3	KAVIKA	Commercial	SO_2, NO_2, PM_{10}, $PM_{2.5}$, NH_3, CO, O_3, Benzene& Meteorological parameters
4	NIMHANS	Sensitive	SO_2, NO_2, PM_{10}, $PM_{2.5}$, NH_3, CO, O_3, Benzene& Meteorological parameters
5	Silkboard	Residential cum Commercial	SO_2, NO_2, PM_{10}, $PM_{2.5}$, NH_3, CO, O_3, Benzene& Meteorological parameters
6	Nisarga Bhavan	Residential	SO_2, NO_2, PM_{10}, CO
7	City Railway Station	Commercial	SO_2, NO_2, PM_{10}, CO & Meteorological parameters

Broad guidelines for Public

AQI is an initiative intended to enhance public awareness and involvement in efforts to improve air quality. People can contribute by maintaining vehicles properly (e.g. get PUC checks, replace car air filter, maintain right tyres pressure), following lane discipline & speed limits, avoiding prolong idling and turning off engines at red traffic signals. The following are some of the best practices that are to be followed to maintain / improve the air Quality.

1) Avoid using private vehicles viz., cars, bikes and instead use public transports viz., Public buses and Metro services.

2) Encourage carpool and use smaller vehicles (e.g. avoid SUVs).

3) Construction projects shall compulsorily put up enclosures and barriers around their project and carry out regular water sprinkling to supress dust. Air purifier can also be installed to mitigate dust pollution.

4) Road dust management by using mechanized road sweeping and water sprinkling system, etc., The Civic bodies shall regularly remove the silt and muck dumped on the roadside and pavements, besides levelling & asphalting of Roads and filling up of potholes should be taken up on top priority.

5) Unnecessary parking of vehicles on roadside junctions and circles should be avoided of around 50 to 100 meters.

6) Avoid open burning of garbage wastes, tree leaves, branches, trash, tyres etc., especially near roadsides, lakes and water bodies, open ground, vacant land and Parks.

NATIONAL AMBIENT AIR QUALITY STANDARDS

Sl. 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_2) µg/m^3	Annual *	50	20	-Improved west and Gaeke Method – Ultraviolet Fluorescence
		24 Hours**	80	80	
2	Nitrogen Dioxide (NO_2) µg/m^3	Annual *	40	30	-Jacob & Hochheiser Modified (NaOH-NaAsO2) Method -Gas phase Chemiluminescence
		24 Hours**	80	80	
3	Particulate Mater (Size less than 10 µm) or PM10 µg/m^3	Annual *	60	60	-Gravimetric -TECOM -Beta attenuation
		24 Hours**	100	100	
4	Particulate Mater (Size less than 10 µm) or PM $_{2.5}$ µg/m^3	Annual *	40	40	-Gravimetric -TECOM -Beta attenuation
		24 Hours**	60	60	
5	Ozone (O_3) µg/m^3	8 Hours *	100	100	-UV Photometric -Chemical Method
		1 Hours**	180	180	
6	Lead (Pb) µg/m^3	Annual *	0.5	0.5	-AAs/ICP Method after sampling on EPM 2000 or equivalent filter paper -ED-XRF using Teflon filter
		24 Hours**	1	1	
7	Carbon Monoxide (CO) µg/m^3	8 Hours *	02	02	-Non dispersive Infrared (NDIR) -Spectroscopy
		1 Hours**	04	04	
8	Ammonia (NH_3) µg/m^3	Annual *	100	100	-Chemiluminescence -Indophenol Blue Method
		24 Hours**	400	400	
9	Benzene (C6H6) µg/m^3	Annual *	05	05	-Gas Chromatography (GC) based continuous analyzer -Adsorption and desorption followed by GC analysis
10	Benzo (a) Pyrene (BaP) µg/m^3	Annual *	01	01	-Solvent extraction followed by HPLC/GC analysis
11	Arsenic (As) µg/m^3	Annual *	06	06	-AAS/ICP Method after sampling on EPM 2000 or equivalent filter paper
12	Nickel (Ni) ng/m^3	Annual *	20	20	-AAS/ICP Method after sampling on EPM 2000 or equivalent filter paper

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