



Air Quality Monthly Report

July, 2024



Department of Environment
Ministry of Environment, Forest and Climate Change
Bangladesh

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Introduction:

Department of Environment (DoE), Bangladesh has established a countrywide air quality monitoring (AQM) network. The continuous monitoring of 6 (six) criteria pollutants ($PM_{2.5}$, PM_{10} , SO_2 , CO, NO_x and O_3) is being done by 31(thirty one) Continuous Air Monitoring Stations (CAMS) and Compact Continuous Air Monitoring Stations (C-CAMS) located in the divisional and industrial districts of the country. The network encompasses all the regions of the country - Dhaka, Narayanganj, Gazipur, Savar, Mymensing, Narsindi in the center, Chittagong in the south-east. Khulna, Cumilla and Barisal in the south, Rajshahi in the west, and Sylhet in the north-east regions, Rangpur in the north west of the country. And C-CAMS are located in Faridpur, Jashore, Satkhira, Bagerhat, Gopalganj, Tangail, Bogura, Tongi, BUET campus, Brahmanbaria, Feni, Noakhali, BSRM (Chattogram), Cox's-Bazar, Nagor Bhaban, Dhaka. The data and information generated from those stations are automatically collected in the central server and are disseminated through DoE website. Air Quality Index (AQI) for each city is calculated and published online daily for notifying the people about the status of air quality in their respective city.

Quality Assurance/Quality Control (QA/QC) methods and procedures are implemented with full documentation and are validated through an international certified calibration reference laboratory. Forms and log sheets document every activity in the air monitoring stations and document all maintenance, calibration, operation and other activities such as all visits to the stations. This monthly report provides an overview and analysis of air quality monitoring data in Bangladesh for the month wise monitoring results.

The report summarizes the data of different CAMS located in different cities of Bangladesh.

Standards of Ambient Air Quality

The Government of Bangladesh has enacted Air Pollution (Control) Rules – 2022 with ambient air quality standards. This report establishes the Air Quality Index (AQI) followed by USEPA guideline to evaluate air pollution.

Table 1: National Ambient Air Quality Standards (NAAQS) for Bangladesh

Pollutant	Limit Value	Averaging time
CO	5 mg/m ³	8 hours ^a
	20 mg/m ³	1 hour ^a
Pb	0.25 µg/m ³	Annual
	0.50 µg/m ³	24 hours
NO _x	40 µg/m ³	Annual
	80 µg/m ³	24 hours
PM ₁₀	50 µg/m ³	Annual ^b
	150 µg/m ³	24 hours ^c
PM _{2.5}	35 µg/m ³	Annual
	65 µg/m ³	24 hours
O ₃	180 µg/m ³	1 hour ^d
	100 µg/m ³	8 hours
SO ₂		Annual
	80 µg/m ³	24 hours ^a

Table 2: Air quality index (AQI) in Bangladesh

Air quality index (AQI)	Category		Colour
	In English	In Bangla	
0-50	Good	ভাল	Green
51-100	Moderate	মধ্যম	Yellow Green
101-150	Caution	সাবধানতা/সতর্কীকরণ	Yellow
151-200	Unhealthy	অস্বাস্থ্যকর	Orange
201-300	Very Unhealthy	খুব অস্বাস্থ্যকর	Red
301-500	Extremely Unhealthy/Hazardous	অত্যন্ত অস্বাস্থ্যকর	Purple

Location Map of Air Monitoring Station

Figure 1: Locations Map of Continuous Air Monitoring Stations (CAMS) under Department of Environment in Bangladesh.



Station Information

Table 3: Overview of the locations and capacity of the CAMS

City	ID	Location	Latitude/ Longitude	Monitoring Capacity	Year of Est.	Type	Inlet & Met tower Height(m)
Dhaka	CAMS-1	Dept of Environment	23°.77'73.94"N 90°.37'26.03"E	PM ₁₀ , PM _{2.5} , SO ₂ , CO, O ₃ & NO _x with Meteorological Parameters	2012	UB/Res	4.8 & 8
	CAMS-2	Farmgate	23°.75'94.10"N 90°.38'86.79"E		2008	Rd/Com	8.8 & 11
	CAMS-3	Darussalam	23°.78'07.75"N 90°.35'54.10"E		2012	UB/Com	8.8 & 11
Gazipur	CAMS-4	Gazipur	23°.99'41.28"N 90°.42'23.15"E		2012	SUB	8.8 & 11
Narayanganj	CAMS-5	Narayanganj	23°.62'60.79"N 90°.50'72.00"E		2012	UB industry	8.8 & 11
Chattogram	CAMS-6	TV Station, Khulshi	22°.36'04.87"N 91°.80'04.54"E		2006	UB1	4.8 & 7
	CAMS-7	Agrabad	22°.32'30.20"N 91°.80'23.36"E		2012	UB/Res	8.8 & 11
Khulna	CAMS-8	Boyra	22°.83'57.75"N 89°.52'90.56"E		2008	UB	6.8 & 10
Rajshahi	CAMS-9	Sapura	24°.38'33.20"N 88°.60'80.07"E		2008	Rd/Res	6.8 & 10
Sylhet	CAMS-10	Red Crecent Campus	24°.88'83.34"N 91°.86'73.47"E		2012	Rd/UB/Res	13.8 & 15
Barishal	CAMS-11	DFO Office Campus	22°.71'02.87"N 90°.36'25.98"E		2012	UB/Res	6.8 & 10
Mymensingh	CAMS-12	DoE Office, Divisional Headquarter	24°.76'24.58"N 90°.40'21.02"E		2019	UB	8.8 & 11
Rangpur	CAMS-13	BTV Rangpur Station	25°.74'73.71"N 89°.22'89.31"E		2019	UB	8.8 & 11
Savar	CAMS-14	Atomic Energy Research Institute	23°.95'37.04"N 90°.27'97.94"E		2019	SUB	10.8 & 14
Narsingdi	CAMS-15	Sadar Upazila Complex	23°.93'24.56"N 90°.71'65.98"E		2019	SUB	8.8 & 11
Cumilla	CAMS-16	Court Area	23°.47'29.88"N 91°.18'06.71"E		2019	UB	8.8 & 11

UB: Urban; Rd: Road; Res: residential; Com: Commercial; SUB: Suburban; Rural: Rural

Table 4: Overview of the locations and capacity of the C-CAMS

City	ID	Location	Lat/Lon	Year of Est.	Type	Monitoring Capacity	Inlet & Met tower Height(m)
Faridpur	C-CAMS-17	Sadar, Faridpur (Municipal Office)	23°.60'64.11"N 89°.83'88.19"E		SUB		9 & 11
Jashore	C-CAMS-18	Sadar, Jashore (circuit house)	23°.16'22.16"N 89°.20'63.70"E		SUB		12 & 14
Satkhira	C-CAMS-19	Shyamnagar, Satkhira	22°.31'59.96"N 89°.04'31.70"E		Rural		5.2 & 7.2
Bagerhat	C-CAMS-20	Rampal, Bagerhat (Maytree Super Thermal Power Project)	22°.59'60.86"N 89°.55'37.20"E		Rural/Industrial		5.7 & 7.7
Gopalganj	C-CAMS-21	Sadar, Gopalganj	23°.00'88.53"N 89°.82'91.60"E		SUB		22 & 24
Tangail	C-CAMS-22	Sadar, Tangail (DoE office)	24°.24'97.96"N 89°.92'93.57"E		SUB		15 & 17
Bogura	C-CAMS-23	Sadar, Bogura (DoE Office)	24°.86'17.79"N 89°.36'11.46"E		SUB		9 & 11
Tongi	C-CAMS-24	BSCIC, Tongi, Gazipur	23°.89'41.74"N 90°.41'12.10"E		Com/Industrial	PM ₁₀ , PM _{2.5} , SO ₂ , CO, O ₃ & NO _x with Meteorological Parameters	18 & 20
BUET	C-CAMS-25	Department of Chemical Engineering, BUET, Dhaka	23°.72'75.91"N 90°.39'27.97"E	2020	UB		10 & 12
Brahmanbaria	C-CAMS-26	Sadar, B.Baria (municipal Office)	23°.97'43.71"N 91°.10'97.69"E		SUB		18 & 20
Feni	C-CAMS-27	Sadar, Feni (DoE Office)	23°.00'62.97"N 91°.38'13.05"E		SUB		18 & 20
Noakhali	C-CAMS-28	Maijdi Bazar, Noakhali (DoE Office)	22°.88'11.48"N 91°.09'69.66"E		SUB		15 & 17
Chattogram BSRM	C-CAMS-29	BSRM, Nasirabad, Chattogram	22°.37'28.38"N 91°.81'80.54"E		UB/Industrial		12 & 14
Cox's-Bazar	C-CAMS-30	Saymon Road, Sadar, Cox's-Bazar (DoE Office)	21°.44'22.08"N 91°.97'10.83"E		SUB		9 & 11
Nagor Bhaban, Dhaka	C-CAMS-31	Nagar Bhaban, DSCC, Dhaka	23°.72'40.75"N 90°.40'91.42"E		UB/Com		13 & 15

UB: Urban; Rd: Road; Res: residential; Com: Commercial; SUB: Suburban; Rural: Rural

Summary of Components

Month of July, 2024

Table 5: Summary of components, Month of July, 2024

Parameter	Summary	DoE	BARC	Darus-sala	Gazipur	Narayangan	TV-Station	Agrabad, C	Sylhet	Khulna	Rajshahi	Barisal	Savar	Mymensingh	Rangpur	Cumilla	Narshingdi
SO2-24hr	Average	7.2	1.3	6.5	DNA	DNA	3.5	6.2	4.8	8.7	3.0	4.1	0.9	0.8	3.0	DNA	2.4
	Max	14.3	2.6	6.6	DNA	DNA	18.5	8.4	5.2	14.8	13.6	5.1	3.3	2.9	8.9	DNA	4.0
	Min	2.5	0.6	6.4	DNA	DNA	0.5	4.6	4.5	0.3	1.5	3.7	0.1	0.5	0.8	DNA	1.6
	Excedance(Days)	0.0	0.0	0.0	DNA	DNA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	DNA	0.0
	Data capture(%)	93.5	71.0	54.8	DNA	DNA	83.9	100.0	100.0	35.5	100.0	100.0	100.0	45.2	96.8	DNA	100.0
NO2-24hr	Average	3.0	27.7	0.3	DNA	0.1	4.0	3.9	DNA	1.8	1.9	0.2	7.9	2.1	4.8	10.7	2.6
	Max	7.7	42.3	0.5	DNA	0.1	16.6	8.4	DNA	2.3	2.0	0.5	13.0	2.1	10.4	17.4	5.2
	Min	1.4	11.4	0.1	DNA	0.1	0.6	1.9	DNA	1.6	1.9	0.1	0.8	2.0	2.7	5.9	1.7
	Excedance(Days)	0.0	0.0	0.0	DNA	0.0	0.0	0.0	DNA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Data capture(%)	100.0	100.0	38.7	DNA	87.1	100.0	100.0	DNA	90.3	100.0	67.7	100.0	32.3	100.0	100.0	100.0
CO-8hr	Average	1.6	2.2	2.1	DNA	0.5	1.4	0.7	1.1	DNA	1.5	DNA	0.4	0.8	1.2	1.7	1.3
	Max	2.1	3.6	2.5	DNA	0.8	3.9	2.5	2.5	DNA	3.9	DNA	2.2	1.6	3.3	2.5	1.6
	Min	0.7	0.3	1.4	DNA	0.5	1.1	0.4	0.2	DNA	0.1	DNA	0.2	0.2	0.8	0.8	0.9
	Excedance(Hour)	0.0	0.0	0.0	DNA	0.0	0.0	0.0	0.0	DNA	0.0	DNA	0.0	0.0	0.0	0.0	0.0
	Data capture(%)	97.3	90.9	99.1	DNA	95.0	52.7	69.8	99.1	DNA	94.6	DNA	99.1	44.2	99.1	99.1	98.3
O3-8hr	Average	DNA	3.9	4.3	27.6	0.3	23.6	DNA	DNA	12.8	20.4	1.4	19.3	18.2	22.3	DNA	7.1
	Max	DNA	26.6	4.4	31.4	0.3	40.9	DNA	DNA	20.6	29.9	6.9	46.6	52.7	30.0	DNA	16.1
	Min	DNA	0.1	4.2	24.0	0.3	10.6	DNA	DNA	0.1	12.7	0.1	1.7	4.6	12.5	DNA	0.9
	Excedance(Hour)	DNA	0.0	0.0	0.0	0.0	0.0	DNA	DNA	0.0	0.0	0.0	0.0	6.0	0.0	DNA	0.0
	Data capture(%)	DNA	97.3	96.5	84.3	2.2	96.1	DNA	DNA	85.6	91.5	63.7	99.1	44.2	61.2	DNA	98.1
PM2.5-24hr	Average	22.0	27.3	33.1	40.7	16.9	10.1	17.1	15.0	12.0	28.9	19.1	35.0	42.3	43.2	25.5	26.2
	Max	38.2	37.0	48.1	83.8	29.2	27.4	73.3	32.1	21.9	56.2	36.5	69.8	55.2	100.8	53.0	47.1
	Min	11.0	14.7	17.2	14.9	7.2	4.5	5.0	8.8	6.3	10.4	12.1	17.2	32.2	21.9	15.2	17.6
	Excedance(Days)	0.0	0.0	0.0	3.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	2.0	0.0	4.0	0.0	0.0
	Data capture(%)	90.3	100.0	100.0	90.3	96.8	100.0	100.0	29.0	87.1	100.0	32.3	100.0	45.2	100.0	100.0	100.0
PM10-24hr	Average	30.6	59.7	50.6	45.5	46.7	33.3	40.5	39.5	26.4	36.0	30.7	65.4	DNA	56.7	40.5	27.8
	Max	44.6	91.6	63.4	88.3	78.9	46.3	68.5	64.5	128.4	58.6	39.7	107.7	DNA	139.5	56.7	51.5
	Min	17.2	27.6	41.0	21.5	19.1	9.2	21.9	18.8	11.8	15.6	19.7	35.6	DNA	23.3	27.9	11.0
	Excedance(Days)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	DNA	0.0	0.0	0.0
	Data capture(%)	100.0	61.3	45.2	90.3	90.3	83.9	96.8	64.5	77.4	100.0	29.0	100.0	DNA	100.0	29.0	100.0
Solar rad. 1hr	Average	168.64	158.59	139.8	15.4	DNA	469.2	166.7	4.5	203.4	750.9	110.3	259.7	185.2	261.5	205.3	244.8
	Max	715.88	842.9	1002.3	160.6	DNA	524.3	852.6	5.0	981.9	DNA	745.0	978.1	997.9	1000.0	951.7	1016.1
	Min	16.50	0.1	DNA	2.6	DNA	20.6	8.6	3.5	9.5	741.2	6.1	0.0	0.0	0.1	0.0	0.0
	Data capture(%)	96.10	87	86	74	DNA	92	98	99	82	97	99	60.8	83.1	70.2	79.7	77.4
	Relative Hum	Average	76.15	90.3	77.5	DNA	DNA	62.0	84.1	39.7	78.2	91.6	73.0	80.0	95.5	87.9	59.3
Max	98.96	100.0	95.0	DNA	DNA	97.9	99.9	39.9	88.0	94.8	83.8	99.4	99.4	99.7	100.0	66.8	
Min	46.16	32.2	50.5	DNA	DNA	57.1	50.4	39.6	45.0	67.9	60.0	36.5	64.5	60.6	15.1	21.3	
Data capture(%)	96.10	34.3	100.0	DNA	DNA	99	96	99	84	96	99	85.5	99.7	98.3	20.0	98.1	
Ambient Tem	Average	25.76	25.9	33.0	DNA	DNA	29.4	31.2	DNA	30.8	32.1	25.4	28.7	28.7	28.9	28.4	28.8
	Max	34.74	32.8	36.6	DNA	DNA	34.6	42.9	DNA	36.8	38.5	37.5	35.7	35.4	34.9	36.0	34.8
	Min	13.99	15.4	21.0	DNA	DNA	25.4	7.4	DNA	9.1	8.0	7.1	7.5	21.2	24.2	9.3	24.6
	Data capture(%)	84.14	88.4	97	DNA	DNA	100	46	DNA	84	95	85	85.5	99.7	94.8	98.5	97.3
	Rainfall 1hr	Average	DNA	5.04	0.1	DNA	DNA	1.7	DNA	DNA	26.1	DNA	0.3	1.6	4.7	3.6	0.4
Max	DNA	67.6	0.8	DNA	DNA	1.9	DNA	DNA	52.0	DNA	0.8	19.1	57.6	45.3	5.6	1.5	
Min	DNA	0.2	0.0	DNA	DNA	0.1	DNA	DNA	0.3	DNA	0.0	0.0	0.1	0.0	0.0	0.0	
Data capture(%)	DNA	6.0	100	DNA	DNA	67	DNA	DNA	1	DNA	93	8.6	16.7	13.2	9.7	46.5	

CAMS= Continuous Air Monitoring Station, NAAQS=National Ambient Air Quality Standard, a=Refurbishment CAMS, PM= Particulate Matter

DNA= Data Not Available

Table 6: Air Quality Index (AQI) Month of July, 2024

Date	Dhaka	Chittagong	Gazipur	Narayangonj	Sylhet	Khulna	Rajshahi	Barisal	Savar	Mymensingh	Rangpur	Cumilla	Norshindi
01-07-2024	97	46	142	96	56	DNA	85	106	109	122	95	77	123
02-07-2024	100	62	150	94	58		91	65	105	165	75	74	93
03-07-2024	97	61	135	78	DNA	DNA	108	96	114	110	72	68	90
04-07-2024	96	37	107	80	DNA	DNA	108	71	101	89	87	68	73
05-07-2024	80	45	140	52	DNA	50	109	106	92	DNA	102	67	76
06-07-2024	89	68	106	51	DNA	58	93	84	104	112	114	76	83
07-07-2024	92	44	139	68	DNA	47	86	77	115	106	104	77	100
08-07-2024	92	65	94	70	DNA	56	68	58	136	143	104	70	89
09-07-2024	74	79	99	53	59	42	45	61	91	134	92	60	72
10-07-2024	84	77	102	58	54	44	84	60	106	107	67	76	94
11-07-2024	88	50	129	70	29	84	90	DNA	96	126	130	81	97
12-07-2024	86	48	95	58	30	53	89	DNA	85	95	140	70	85
13-07-2024	98	40	147	60	60	52	135	DNA	138	DNA	132	82	89
14-07-2024	97	34	112	71	42	61	95	DNA	116	122	130	86	94
15-07-2024	78	44	96	51	42	24	70	DNA	95	DNA	150	78	73
16-07-2024	85	38	60	48	85	32	59	DNA	75	DNA	108	66	67
17-07-2024	90	48	88	64	65	44	64	DNA	136	DNA	147	76	67
18-07-2024	90	57	124	64	65	33	58	DNA	151	DNA	132	99	108
19-07-2024	64	DNA	66	40	DNA	46	82	DNA	79	DNA	121	68	64
20-07-2024	62	DNA	67	37	DNA	32	47	DNA	71	DNA	87	68	69
21-07-2024	59	DNA	66	26	DNA	34	38	DNA	38	DNA	61	72	62
22-07-2024	69	DNA	64	DNA	DNA	30	40	DNA	68	DNA	88	80	66
23-07-2024	64	DNA	56	62	DNA	33	53	DNA	63	DNA	78	78	64
24-07-2024	79	52	54	56	DNA	43	57	DNA	84	DNA	70	65	67
25-07-2024	88	DNA	DNA	68	DNA	48	88	DNA	84	DNA	102	78	64
26-07-2024	76	DNA	DNA	52	DNA	45	67	DNA	76	DNA	107	80	67
27-07-2024	69	DNA	DNA	55	DNA	45	101	DNA	85	DNA	93	77	83
28-07-2024	77	DNA	DNA	56	DNA	DNA	83	DNA	76	DNA	109	129	67
29-07-2024	73	47	67	63	DNA	45	82	DNA	74	DNA	145	84	67
30-07-2024	63	47	66	57	56	DNA	70	76	77	DNA	125	57	78
31-07-2024	108	47	104	61	35	DNA	126	76	111	DNA	176	76	82

Figure 2: Graphical representation of 24 hr. average of Sulfur-Di-Oxide (SO₂).

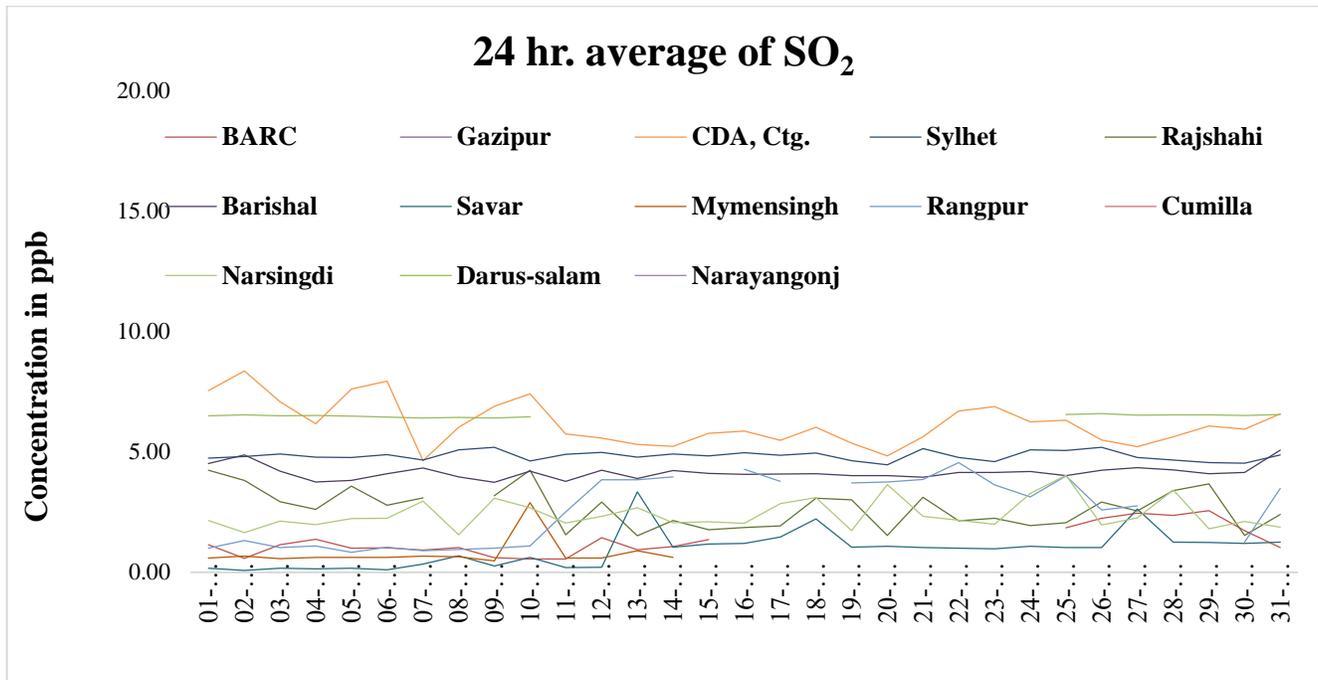


Figure 3: Graphical representation of 24 hr. average of Nitrogen-Di-Oxide (NO₂).

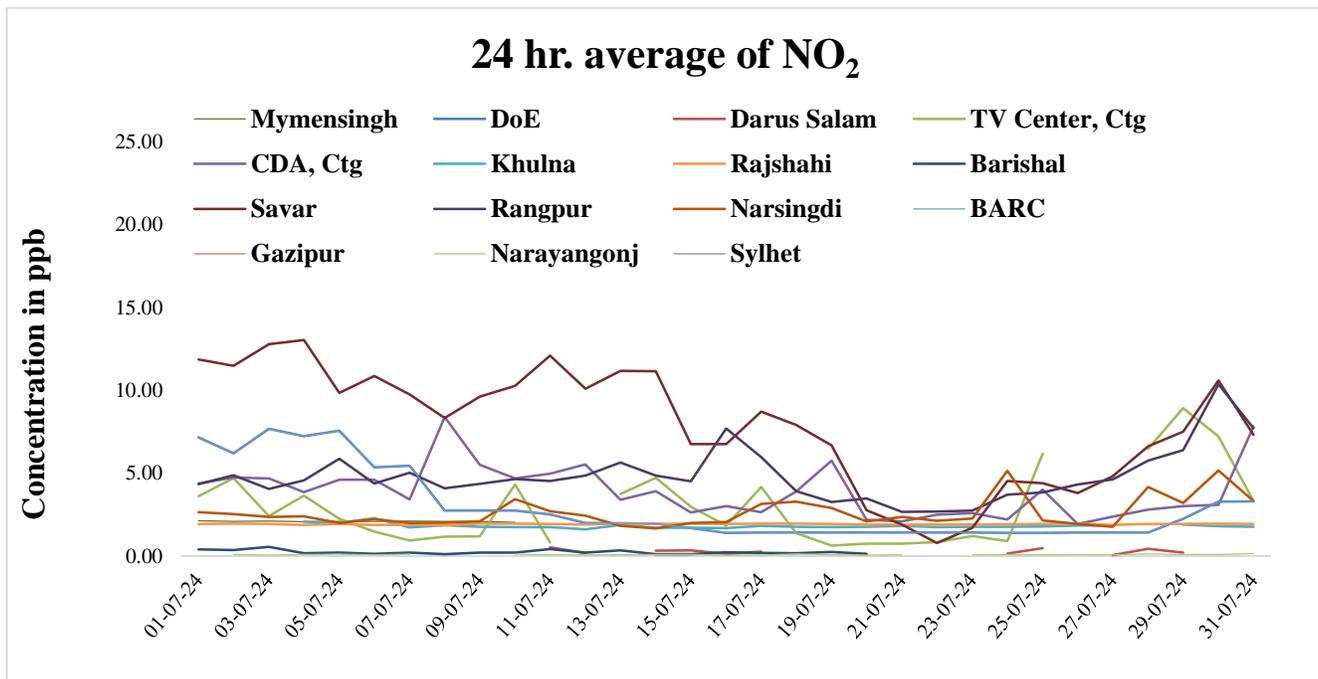


Figure 4: Graphical representation of 8 hr. average of Carbon Mono-Oxide (CO)

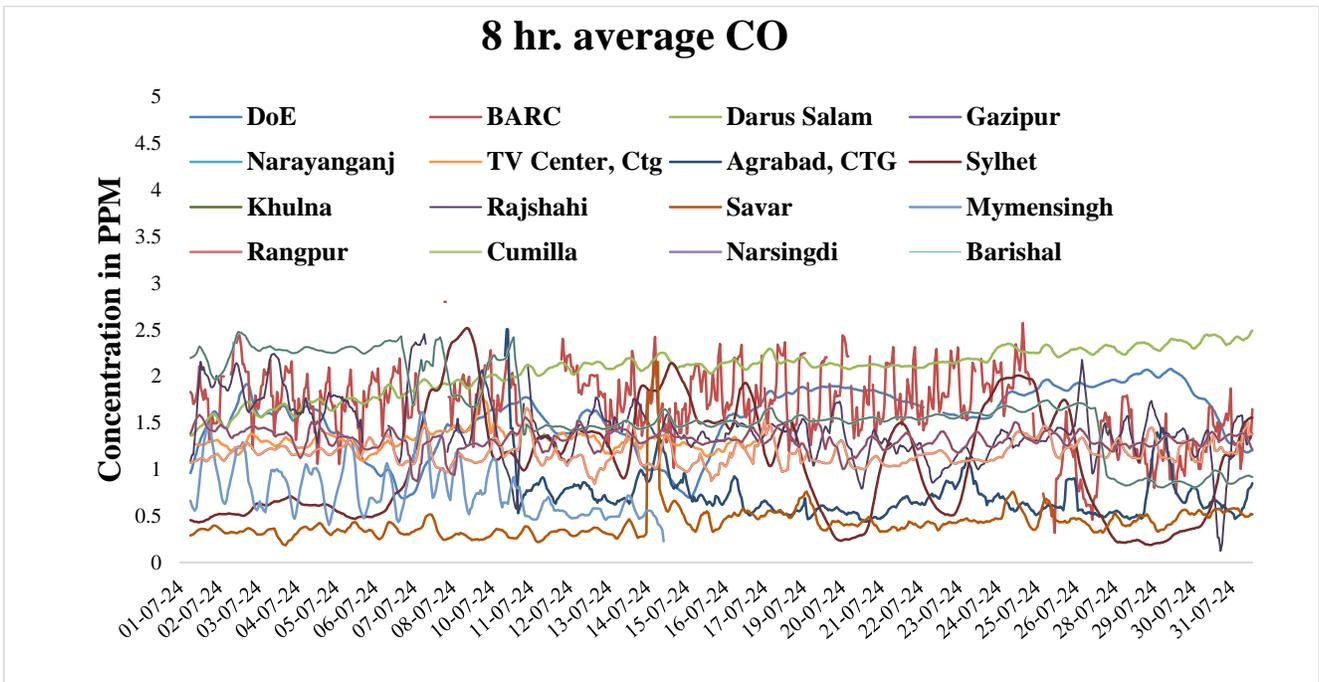


Figure 5: Graphical representation of 8 hr. average of Ozone (O₃)

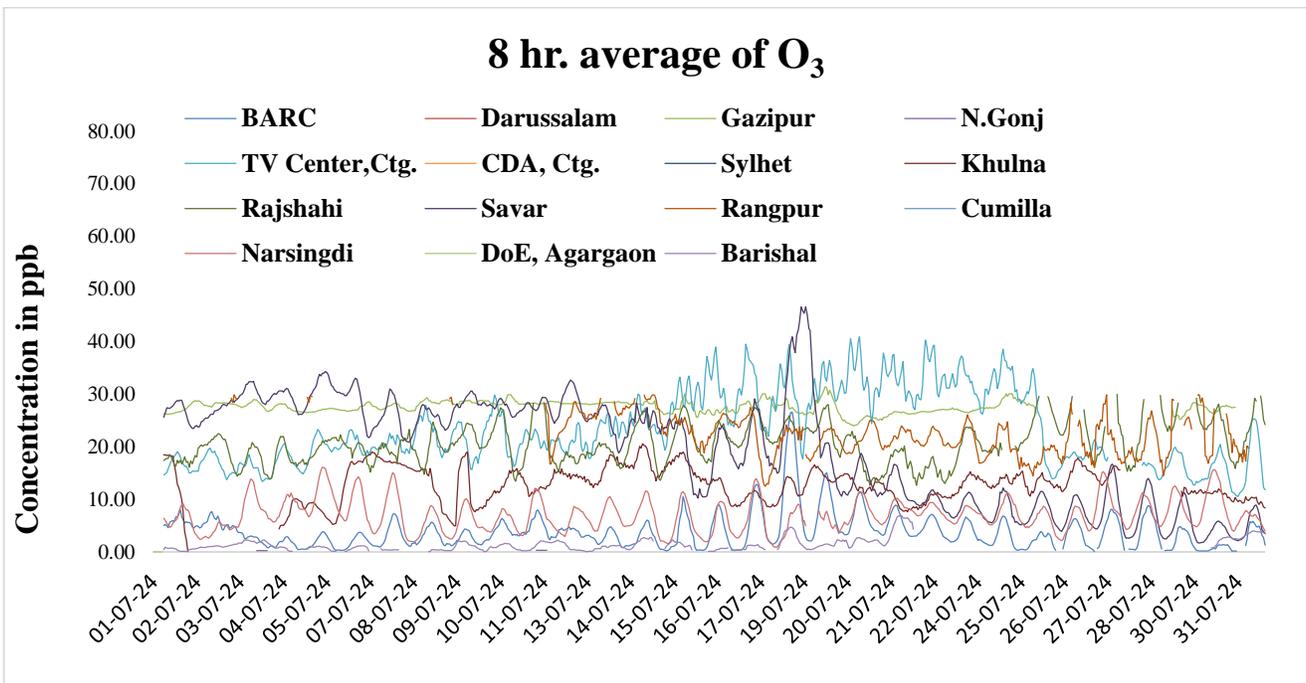


Figure 6: Graphical representation of 24 hr. average concentration of PM₁₀.

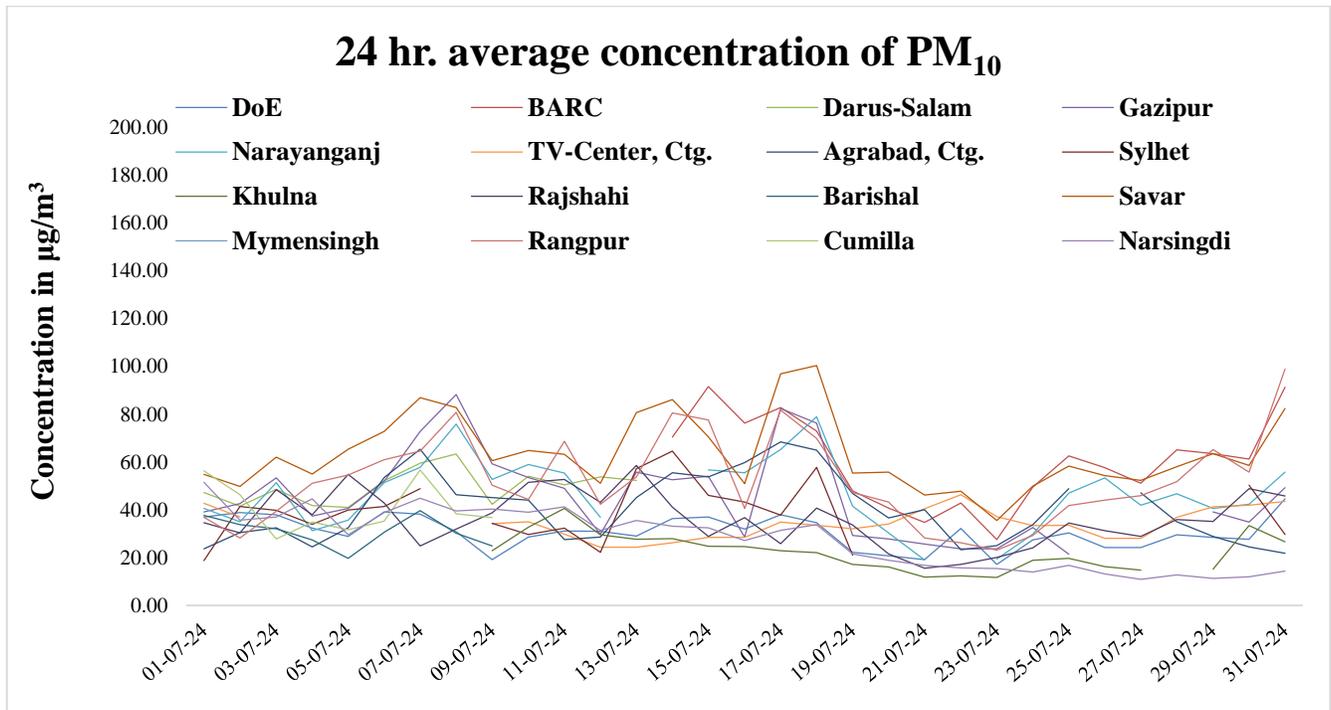
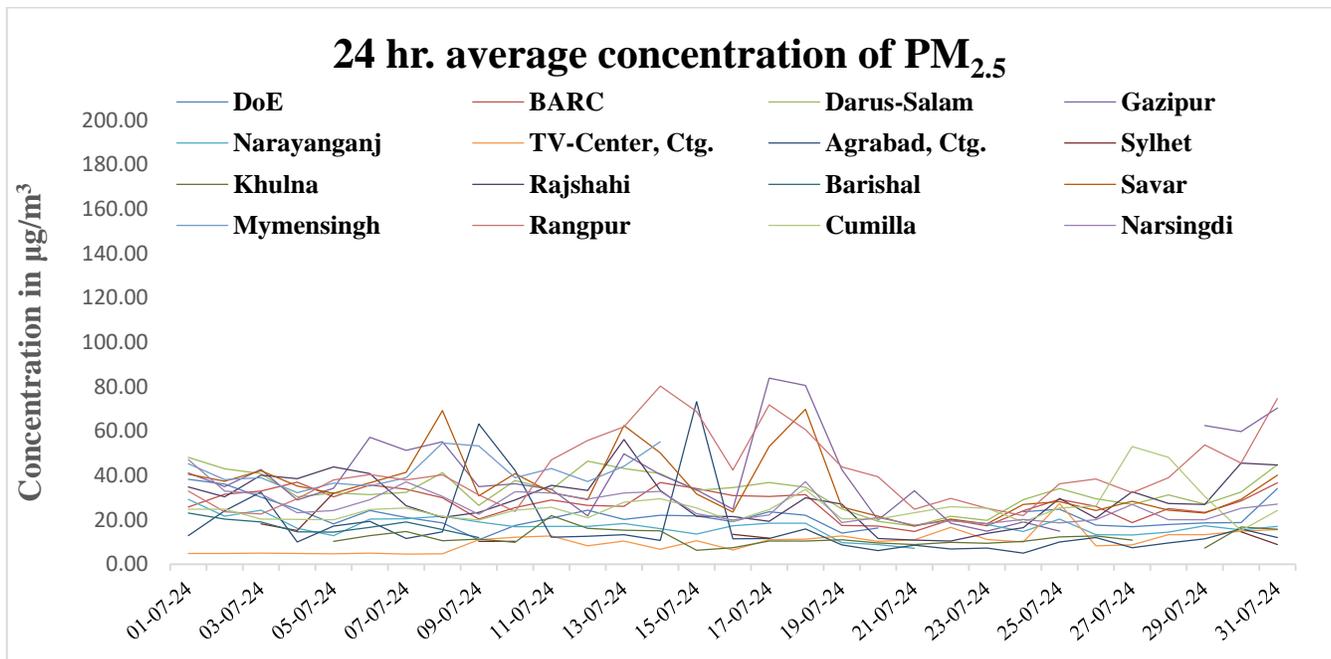


Figure 7: Graphical representation of 24 hr. average concentration of PM_{2.5}.



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