



Air Quality Monthly Report

AUGUST, 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 August, 2024

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

Parameter	Summary	DOE	BARC	Darus-salam, Dhaka	Gazipur	Narayanganj	TV-Station, Chattagram	Agrabad, Chattagram	Sylhet	Khulna	Rajshahi	Barisal	Savar	Mymensingh	Rangpur	Cumilla	Narshingdi
SO ₂ -24 hr	Average	DNA	1.8	6.6	7.2	DNA	DNA	5.9	5.3	DNA	2.3	5.5	2.0	1.2	4.0	1.5	DNA
	Max	DNA	3.4	6.6	8.5	DNA	DNA	6.9	9.4	DNA	7.6	6.1	6.0	2.7	11.2	2.9	DNA
	Min	DNA	0.2	6.5	4.2	DNA	DNA	4.7	4.4	DNA	1.3	4.6	1.0	0.7	0.1	1.0	DNA
	Excedance(Days)	DNA	0.0	0.0	0.0	DNA	DNA	0.0	0.0	DNA	0.0	0.0	0.0	0.0	0.0	0.0	DNA
	Data capture(%)	DNA	100.0	100.0	48.4	DNA	DNA	100.0	87.1	DNA	100.0	100.0	100.0	45.2	80.6	61.3	DNA
NO ₂ -24 hr	Average	4.5	31.1	2.6	DNA	3.4	DNA	3.4	DNA	1.8	2.5	0.2	7.0	DNA	6.5	5.4	4.7
	Max	5.4	55.0	4.5	DNA	9.2	DNA	5.6	DNA	1.9	4.0	0.3	12.5	DNA	13.3	6.9	13.4
	Min	3.6	9.5	1.3	DNA	0.1	DNA	1.9	DNA	1.7	1.8	0.1	1.1	DNA	3.6	4.4	1.2
	Excedance(Days)	0.0	1.0	0.0	DNA	0.0	DNA	0.0	DNA	0.0	0.0	0.0	0.0	DNA	0.0	0.0	0.0
	Data capture(%)	93.5	100.0	67.7	DNA	87.1	DNA	100.0	DNA	100.0	100.0	9.7	100.0	DNA	93.5	100.0	45.2
CO-8hr	Average	1.6	1.8	1.4	1.1	0.7	DNA	0.7	1.5	DNA	1.3	DNA	0.8	0.5	0.7	1.0	0.9
	Max	2.7	3.1	2.8	1.5	1.1	DNA	2.7	2.6	DNA	2.7	DNA	2.2	0.7	1.9	2.1	1.7
	Min	0.7	0.9	0.0	0.9	0.5	DNA	0.4	0.1	DNA	0.0	DNA	0.2	0.3	0.1	0.8	0.0
	Excedance(Hour)	0.0	0.0	0.0	0.0	0.0	DNA	0.0	0.0	DNA	0.0	DNA	0.0	0.0	0.0	0.0	0.0
	Data capture(%)	90.5	99.1	99.1	19.1	98.7	DNA	97.7	85.8	DNA	79.3	DNA	99.1	43.4	86.7	99.1	41.7
O ₃ -8hr	Average	DNA	2.8	2.3	8.8	5.2	DNA	DNA	DNA	9.8	23.3	3.9	5.1	16.5	22.7	DNA	7.0
	Max	DNA	18.1	2.4	26.9	5.3	DNA	DNA	DNA	15.7	36.7	10.7	48.0	52.6	51.1	DNA	19.2
	Min	DNA	0.1	2.3	6.1	5.1	DNA	DNA	DNA	5.1	11.8	1.8	1.1	6.1	10.6	DNA	2.1
	Excedance(Hour)	DNA	0.0	0.0	0.0	0.0	DNA	DNA	DNA	0.0	0.0	0.0	0.0	6.0	1.0	DNA	0.0
	Data capture(%)	DNA	88.8	33.9	38.4	30.1	DNA	DNA	DNA	99.1	99.1	86.0	99.1	43.7	89.5	DNA	47.3
PM _{2.5} -24hr	Average	25.3	27.4	38.5	34.4	14.9	DNA	15.5	12.6	18.1	32.8	DNA	36.0	31.3	35.8	19.4	22.8
	Max	74.5	52.5	65.6	108.5	30.0	DNA	34.7	43.0	38.4	89.8	DNA	65.3	61.5	60.1	34.2	40.6
	Min	6.6	10.3	20.0	11.7	5.6	DNA	7.2	7.3	10.8	16.6	DNA	13.7	16.2	16.2	7.8	13.0
	Excedance(Days)	1.0	0.0	1.0	1.0	0.0	DNA	0.0	0.0	0.0	1.0	DNA	1.0	0.0	0.0	0.0	0.0
	Data capture(%)	93.5	100.0	93.5	71.0	93.5	DNA	100.0	83.9	100.0	87.1	DNA	100.0	45.2	93.5	100.0	51.6
PM ₁₀ -24hr	Average	35.0	60.6	55.1	41.5	97.8	DNA	29.8	32.9	25.8	37.6	DNA	62.6	50.5	58.4	64.4	12.2
	Max	66.9	111.8	113.5	96.2	598.9	DNA	49.4	48.5	49.2	86.3	DNA	118.5	88.2	115.1	325.6	12.2
	Min	14.5	32.7	22.9	15.4	21.8	DNA	16.6	18.8	14.4	18.5	DNA	29.3	14.7	16.4	10.8	12.2
	Excedance(Days)	0.0	0.0	0.0	0.0	1.0	DNA	0.0	0.0	0.0	0.0	DNA	0.0	0.0	0.0	1.0	0.0
	Data capture(%)	74.2	100.0	90.3	100.0	38.7	DNA	100.0	80.6	100.0	90.3	DNA	100.0	45.2	90.3	32.3	3.2
Solar rad. 1hr	Average	160.72	128.26	117.9	7.1	DNA	DNA	121.5	4.5	135.2	728.0	77.6	171.8	125.9	270.0	154.2	156.4
	Max	636.32	844.0	1005.4	19.8	DNA	DNA	815.7	20.6	780.9	888.9	817.4	943.0	828.0	949.7	861.8	1035.8
	Min	21.64	0.1	980.5	0.0	DNA	DNA	9.1	3.8	0.3	0.2	6.1	0.0	0.0	0.1	0.0	0.0
	Data capture(%)	87.37	97	100	71	DNA	DNA	99	84	84	92	99	74.9	56.9	62.4	86.7	40.1
Relative Humidity 1hr	Average	77.75	96.2	81.0	62.1	DNA	DNA	88.9	39.7	79.7	91.2	61.7	86.5	97.0	87.6	41.8	44.1
	Max	91.10	100.0	94.5	74.1	DNA	DNA	100.0	40.3	93.1	97.2	81.5	99.4	99.4	99.7	51.8	70.4
	Min	47.08	64.5	54.8	38.2	DNA	DNA	57.7	39.6	45.0	63.0	57.1	56.7	24.8	60.5	28.5	19.0
	Data capture(%)	87.23	48.3	99.7	0	DNA	DNA	87	84	99	96	99	99.3	64.7	90.9	0.4	46.2
Ambient Temp. 1hr	Average	27.31	25.2	31.1	18.7	DNA	DNA	33.1	DNA	29.6	30.9	24.2	27.3	27.0	28.2	27.0	27.2
	Max	31.99	31.9	35.6	33.2	DNA	DNA	42.8	DNA	35.6	37.0	33.7	33.0	33.2	33.7	34.0	34.1
	Min	16.58	13.2	7.1	7.1	DNA	DNA	14.7	DNA	26.3	9.1	8.9	24.2	8.0	18.8	23.7	12.6
	Data capture(%)	87.23	99.7	65	1	DNA	DNA	27	DNA	98	94	99	97.3	64.2	86.6	100.0	45.2
Rainfall 1hr	Average	DNA	2.86	0.3	0.0	DNA	DNA	0.0	DNA	45.5	68.0	0.3	2.7	4.8	3.6	0.6	0.3
	Max	DNA	31.8	0.8	0.0	DNA	DNA	0.0	DNA	52.0	70.1	0.8	29.4	50.4	22.6	7.2	0.8
	Min	DNA	0.2	0.0	0.0	DNA	DNA	0.0	DNA	39.0	23.2	0.0	0.3	0.3	0.1	0.0	0.1
	Data capture(%)	DNA	14.9	100	9	DNA	DNA	22	DNA	0	10	91	15.1	19.4	10.8	25.1	33.1

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

DNA= Data Not Available

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

Date	Dhaka	Chittagon g	Gazipur	Narayango nj	Sylhet	Khulna	Rajshahi	Barisal	Savar	Mymensin gh	Rangpur	Cumilla	Norshindi
01-08-24	70	40	32	34	41	DNA	60	DNA	53	DNA	80	50	60
02-08-24	87	61	36	40	29	DNA	54	DNA	69	DNA	59	57	74
03-08-24	87	61	36	40	29	DNA	54	DNA	69	DNA	85	83	72
04-08-24	85	57	DNA	55	47	54	76	DNA	109	DNA	DNA	57	DNA
05-08-24	89	41	DNA	53	41	62	80	DNA	78	DNA	DNA	70	DNA
06-08-24	70	46	DNA	49	35	35	87	DNA	85	DNA	DNA	88	DNA
07-08-24	73	35	DNA	37	49	51	75	DNA	104	DNA	DNA	61	DNA
08-08-24	73	49	DNA	50	48	58	82	DNA	84	DNA	DNA	57	DNA
09-08-24	76	53	DNA	DNA	40	46	87	DNA	74	DNA	139	61	DNA
10-08-24	76	67	DNA	60	35	66	96	DNA	87	DNA	145	61	DNA
11-08-24	110	70	125	72	62	73	73	DNA	137	DNA	173	80	103
12-08-24	103	76	125	98	52	72	141	DNA	144	DNA	130	97	115
13-08-24	111	72	118	62	119	50	93	DNA	150	DNA	135	91	DNA
14-08-24	118	46	98	63	59	88	94	DNA	142	DNA	118	76	DNA
15-08-24	82	30	117	47	32	63	95	DNA	118	DNA	105	66	DNA
16-08-24	85	19	66	42	25	62	90	DNA	112	DNA	83	48	DNA
17-08-24	44	45	46	25	52	41	87	DNA	68	DNA	87	32	DNA
18-08-24	81	41	61	46	46	54	70	DNA	88	95	77	49	DNA
19-08-24	70	35	99	35	49	45	64	DNA	48	67	64	49	DNA
20-08-24	77	55	73	DNA	27	67	77	DNA	82	51	80	74	DNA
21-08-24	148	50	92	DNA	43	107	92	DNA	148	80	60	42	84
22-08-24	127	55	87	84	54	97	91	DNA	93	60	61	52	54
23-08-24	101	36	68	47	40	55	76	DNA	95	64	65	53	59
24-08-24	92	28	67	54	52	54	62	DNA	84	86	83	41	65
25-08-24	73	31	76	65	25	53	132	DNA	52	69	76	43	52
26-08-24	74	21	77	37	43	56	DNA	DNA	85	67	61	47	58
27-08-24	103	32	101	40	63	51	59	DNA	93	86	70	67	52
28-08-24	122	53	115	62	DNA	64	76	DNA	133	135	95	76	79
29-08-24	112	53	151	66	DNA	65	90	DNA	152	148	129	98	81
30-08-24	111	29	80	87	DNA	58	66	DNA	130	145	135	65	79
31-08-24	58	33	117	55	DNA	52	37	DNA	77	103	86	65	58

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

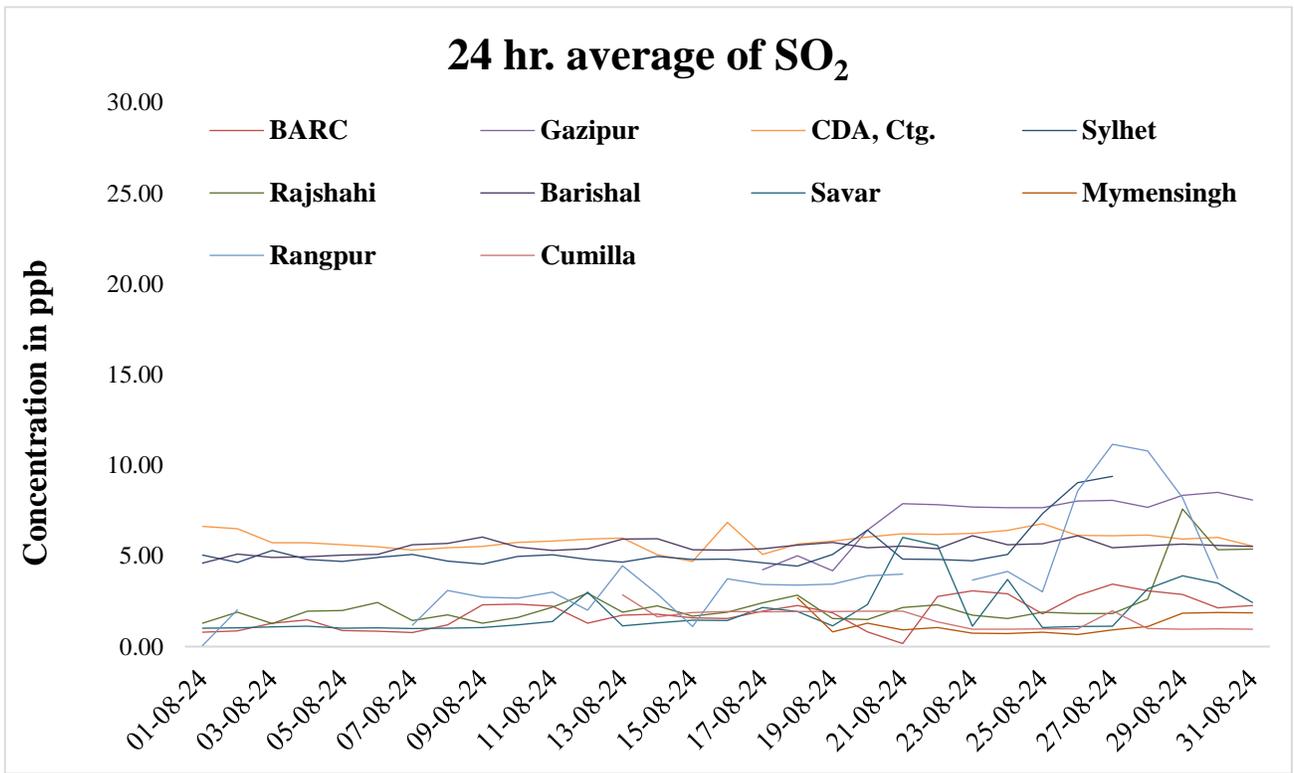


Figure 3: Graphical representation of 24 hr. average of Nitrogen-Di-Oxide (NO₂).

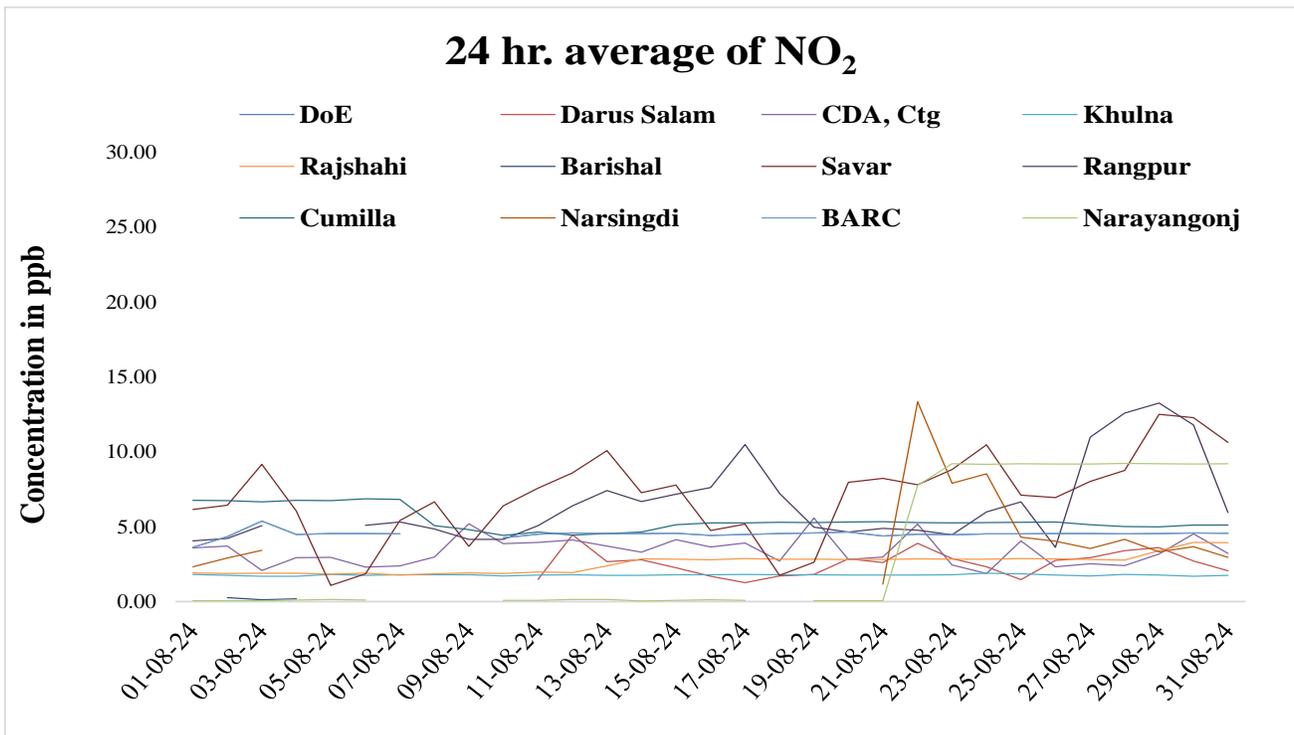


Figure 4: Graphical representation of 8 hr. average of Carbon Mono-Oxide (CO)

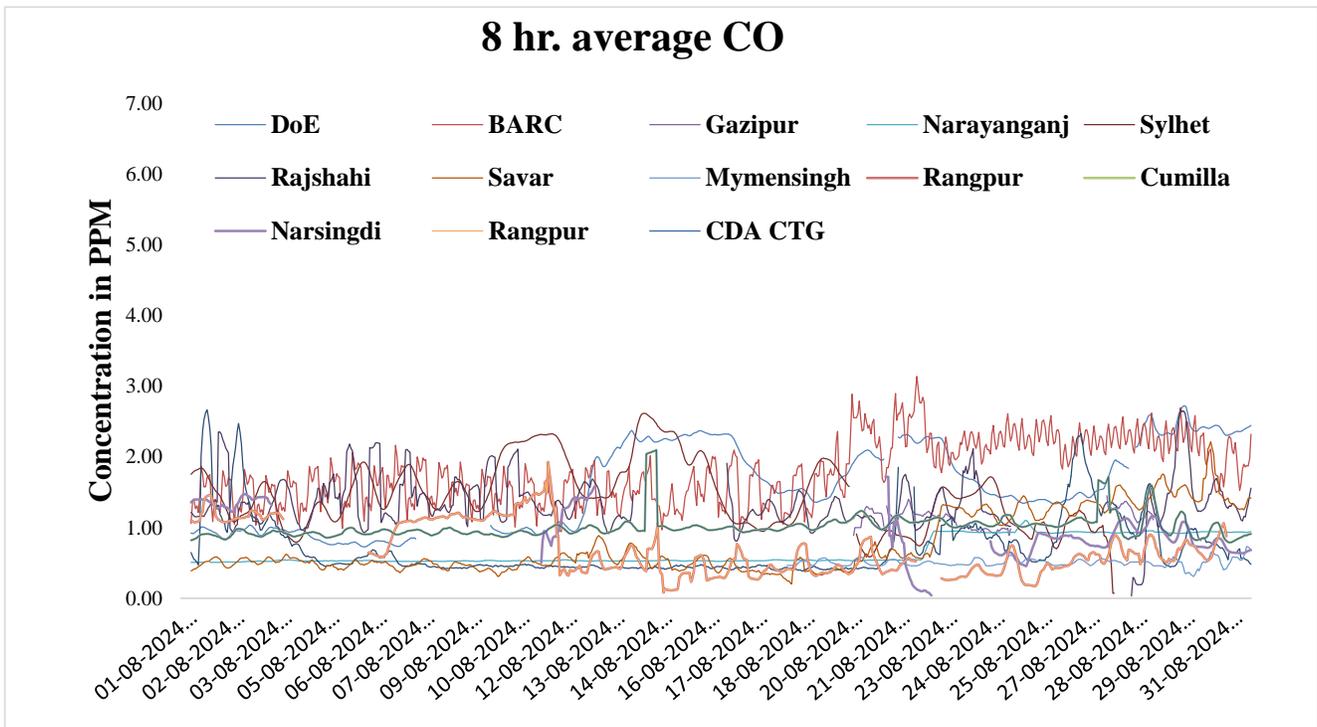


Figure 5: Graphical representation of 8 hr. average of Ozone (O₃)

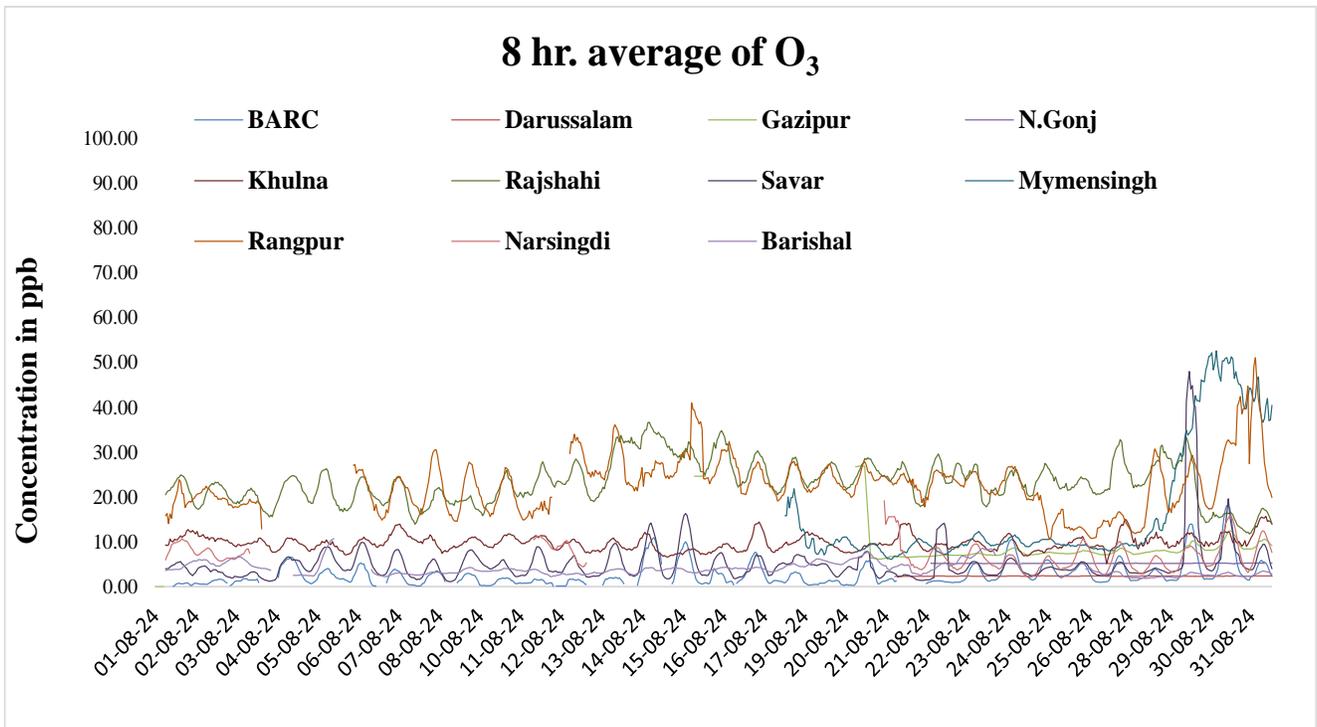


Figure 6: Graphical representation of 24 hr. average concentration of PM₁₀.

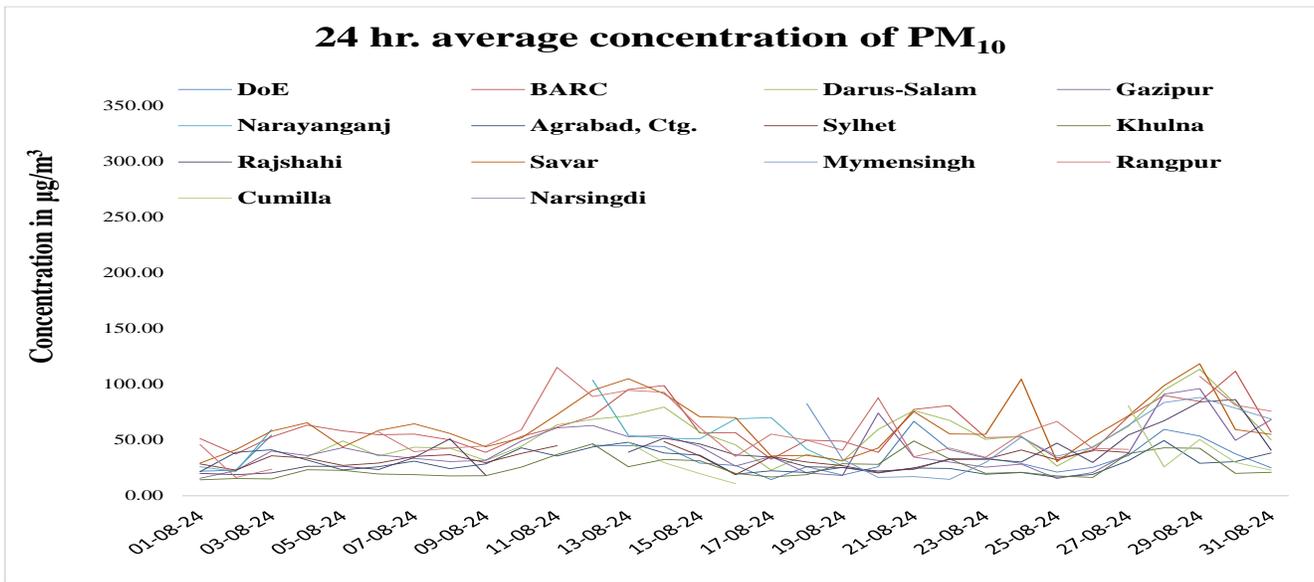
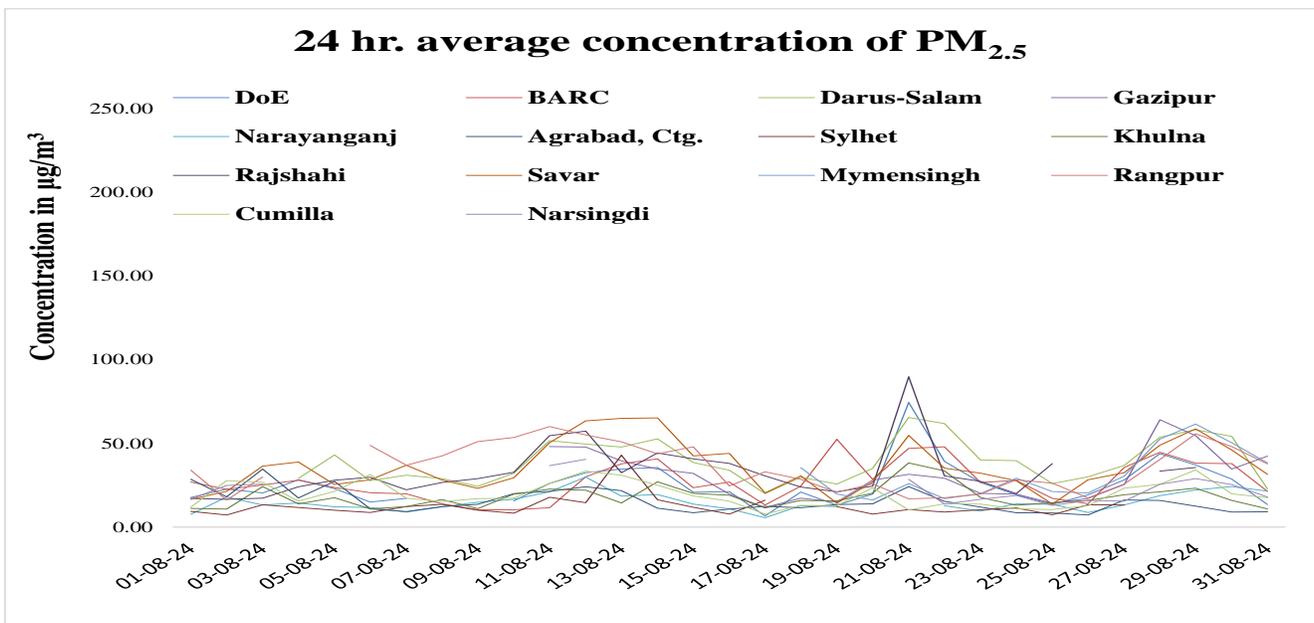


Figure 7: Graphical representation of 24 hr. average concentration of PM_{2.5}.



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