



Air Quality Monthly Report

April, 2024



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

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Introduction:

Department of Environment (DoE), Bangladesh has been 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 public 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

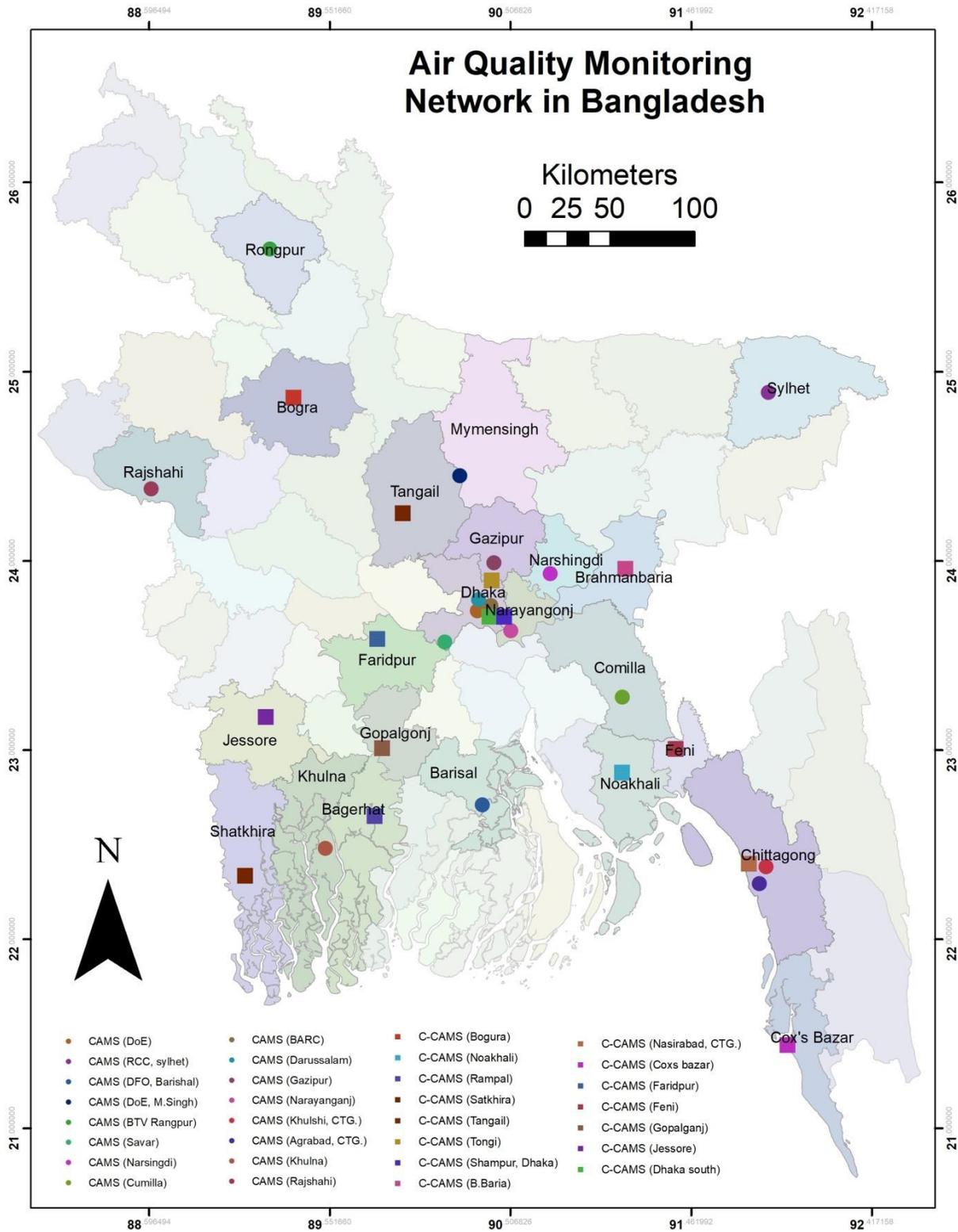
Pollutant	Limit Value	Averaging time
CO	5 mg/m ³	8 hours ^a
	20 mg/m ³	1 hour ^a
Pb	0.25 µg/m ³	Annual
	0.50 µg/m ³	24 hours
NO _x	40 µg/m ³	Annual
	80 µg/m ³	24 hours
PM ₁₀	50 µg/m ³	Annual ^b
	150 µg/m ³	24 hours ^c
PM _{2.5}	35 µg/m ³	Annual
	65 µg/m ³	24 hours
O ₃	180 µg/m ³	1 hour ^d
	100 µg/m ³	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	ভালো	Green
51-100	Moderate	মোটামুটি	Yellow Green
101-150	Caution	সতর্কতামূলক	Yellow
151-200	Unhealthy	মোটামুটি 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.Barria (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 April, 2024

Table 5 Summary of components_ Month of April, 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	8.5	1.3	9.1	12.7	DNA	3.5	8.8	5.4	8.6	5.2	DNA	1.7	10.9	6.0	8.2	4.0	
	Max	12.3	2.9	11.2	14.3	DNA	8.0	12.3	6.1	16.3	8.5	DNA	4.9	12.2	10.3	16.4	14.5	
	Min	5.1	0.1	4.0	9.9	DNA	1.1	6.4	5.1	1.6	2.7	DNA	0.9	8.2	3.3	1.0	0.5	
	Excedance(Days)	0.0	0.0	0.0	0.0	DNA	0.0	0.0	0.0	0.0	0.0	DNA	0.0	0.0	0.0	0.0	0.0	0.0
	Data capture(%)	54.8	58.1	83.9	25.8	DNA	96.8	87.1	74.2	80.6	96.8	DNA	96.8	83.9	45.2	45.2	58.1	
NO ₂ -24 hr	Average	5.3	34.0	2.4	DNA	DNA	6.8	7.0	DNA	1.8	4.3	1.5	3.9	1.6	4.2	6.6	2.1	
	Max	8.7	39.5	9.5	DNA	DNA	8.4	8.4	DNA	2.1	4.4	1.6	3.9	1.7	6.6	7.8	2.2	
	Min	0.3	16.9	0.1	DNA	DNA	4.0	4.5	DNA	1.7	4.0	1.4	3.8	1.4	2.5	4.6	1.8	
	Excedance(Days)	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	0.0	0.0	0.0
	Data capture(%)	67.7	48.4	93.5	DNA	DNA	93.5	87.1	DNA	93.5	41.9	6.5	96.8	83.9	41.9	45.2	54.8	
CO-8hr	Average	1.3	1.4	DNA	1.1	0.7	0.7	2.8	1.4	2.8	2.1	DNA	1.0	1.5	1.5	2.3	1.3	
	Max	3.1	3.6	DNA	1.2	1.2	1.4	4.0	2.8	4.1	3.6	DNA	2.0	3.0	3.4	3.6	2.4	
	Min	1.1	0.1	DNA	0.8	0.5	0.2	0.5	0.2	1.3	0.4	DNA	0.5	0.4	0.1	0.6	0.9	
	Excedance(Hour)	0.0	0.0	DNA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	DNA	0.0	0.0	0.0	0.0	0.0	
	Data capture(%)	88.8	51.3	DNA	57.8	98.9	52.7	24.6	98.9	3.2	96.2	DNA	41.5	84.9	93.4	88.6	50.3	
O ₃ -8hr	Average	DNA	11.4	4.1	7.7	5.5	DNA	DNA	1.6	100.5	15.1	16.3	11.4	15.0	17.9	8.8	13.1	
	Max	DNA	30.0	4.3	11.8	16.1	DNA	DNA	1.8	835.4	28.4	29.0	28.3	27.4	30.0	25.9	29.9	
	Min	DNA	1.8	1.1	5.7	0.2	DNA	DNA	1.4	18.7	5.7	4.2	0.2	3.0	1.8	1.7	0.4	
	Excedance(Hour)	DNA	0.0	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	
	Data capture(%)	DNA	52.3	95.6	5.4	61.2	DNA	DNA	8.1	92.9	96.5	10.3	34.0	84.7	79.4	81.2	75.0	
PM _{2.5} -24hr	Average	56.4	71.6	90.0	87.8	241.3	116.0	61.7	35.2	47.7	105.5	48.4	87.8	122.7	151.4	106.5	94.0	
	Max	125.1	113.9	173.3	126.7	359.6	223.2	108.3	96.7	100.9	178.4	100.4	180.0	172.1	231.3	206.6	203.2	
	Min	28.8	54.7	48.8	54.3	173.2	64.6	29.3	19.0	8.4	62.8	27.1	40.6	66.3	101.4	53.5	53.9	
	Excedance(Days)	26.0	7.0	21.0	11.0	30.0	29.0	12.0	1.0	7.0	28.0	6.0	26.0	26.0	30.0	24.0	11.0	
	Data capture(%)	90.3	58.1	87.1	41.9	96.8	96.8	77.4	77.4	93.5	96.8	87.1	96.8	83.9	96.8	87.1	58.1	
PM ₁₀ -24hr	Average	101.6	154.1	129.0	153.8	321.5	214.2	131.0	98.5	95.8	DNA	169.3	157.1	205.7	226.9	135.3	301.0	
	Max	135.3	244.7	225.4	206.0	479.6	293.0	184.1	160.2	157.6	DNA	342.3	268.8	296.4	308.5	316.2	301.0	
	Min	74.2	116.3	92.8	106.3	237.7	154.8	76.5	54.9	44.6	DNA	80.1	108.3	125.8	164.1	71.8	301.0	
	Excedance(Days)	25.0	8.0	6.0	9.0	30.0	20.0	6.0	3.0	1.0	DNA	5.0	11.0	22.0	30.0	4.0	1.0	
	Data capture(%)	80.6	54.8	93.5	61.3	96.8	64.5	67.7	93.5	90.3	DNA	29.0	96.8	83.9	96.8	45.2	3.2	
Solar rad. 1hr	Average	146.05	273.21	203.0	0.0	0.0	518.2	178.3	4.2	169.8	753.5	137.3	363.8	263.3	404.6	276.1	187.0	
	Max	729.34	758.3	981.0	0.0	0.0	554.8	742.7	89.1	795.7	781.0	772.1	974.8	798.5	997.8	827.9	444.4	
	Min	20.94	0.1	7.6	0.0	0.0	231.3	9.0	3.1	0.6	744.6	8.3	0.0	0.0	0.1	0.0	0.0	
	Excedance(Days)	89.38	21	100	0	0	96	77	96	94	92	85	60.5	51.1	56.7	54.6	1.9	
	Data capture(%)	89.38	21	100	0	0	96	77	96	94	92	85	60.5	51.1	56.7	54.6	1.9	
Relative Humidity 1hr	Average	58.97	60.0	63.1	DNA	DNA	58.1	67.9	39.7	80.7	91.4	71.3	61.7	80.7	67.1	0.0	45.0	
	Max	82.95	99.9	91.8	DNA	DNA	91.9	97.7	47.0	87.0	94.6	86.8	99.0	99.4	99.5	0.0	60.3	
	Min	15.13	16.7	17.0	DNA	DNA	57.1	15.7	39.6	65.8	85.2	58.1	15.6	22.4	24.3	0.0	19.5	
	Excedance(Days)	89.25	30.9	99.9	DNA	DNA	95	76	96	94	92	85	98.0	80.5	99.9	0.0	3.2	
	Data capture(%)	89.25	30.9	99.9	DNA	DNA	95	76	96	94	92	85	98.0	80.5	99.9	0.0	3.2	
Ambient Temp. 1hr	Average	34.15	26.9	28.9	DNA	DNA	27.2	32.1	0.0	32.5	34.1	32.8	29.9	28.9	27.8	29.2	23.0	
	Max	42.98	34.3	36.2	DNA	DNA	31.6	43.0	0.0	42.7	43.0	42.9	38.8	38.8	36.6	36.1	24.6	
	Min	24.04	20.1	18.1	DNA	DNA	25.0	18.2	0.0	18.2	7.8	20.0	20.2	20.4	20.0	20.3	20.6	
	Excedance(Days)	38.84	33.5	67	DNA	DNA	13	34	0	94	88	81	97.4	78.5	96.0	80.2	1.5	
	Data capture(%)	38.84	33.5	67	DNA	DNA	13	34	0	94	88	81	97.4	78.5	96.0	80.2	1.5	
Rainfall 1hr	Average	DNA	DNA	DNA	0.4	DNA	DNA	DNA	DNA	DNA	DNA	0.5	0.0	DNA	DNA	DNA	DNA	
	Max	DNA	DNA	DNA	0.8	DNA	DNA	DNA	DNA	DNA	DNA	1.1	0.1	DNA	DNA	DNA	DNA	
	Min	DNA	DNA	DNA	0.0	DNA	DNA	DNA	DNA	DNA	DNA	0.0	0.0	DNA	DNA	DNA	DNA	
	Excedance(Days)	DNA	DNA	DNA	13	DNA	DNA	DNA	DNA	DNA	DNA	84	0.8	DNA	DNA	DNA	DNA	
	Data capture(%)	DNA	DNA	DNA	13	DNA	DNA	DNA	DNA	DNA	DNA	84	0.8	DNA	DNA	DNA	DNA	

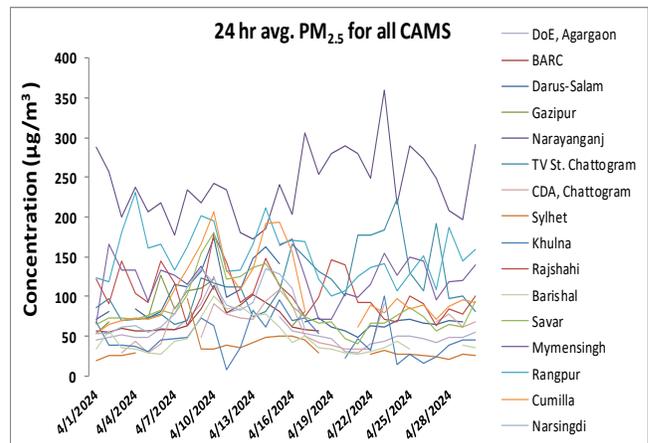
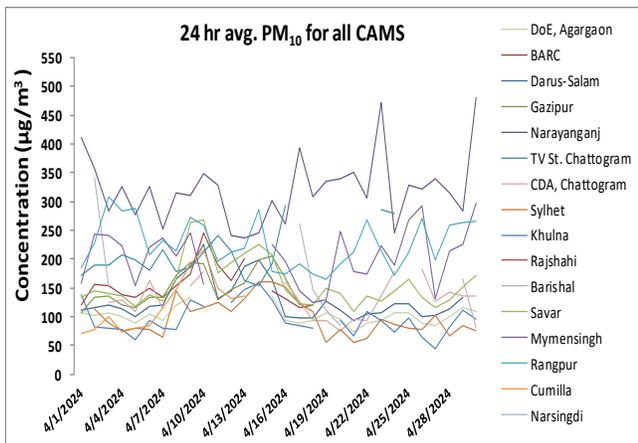
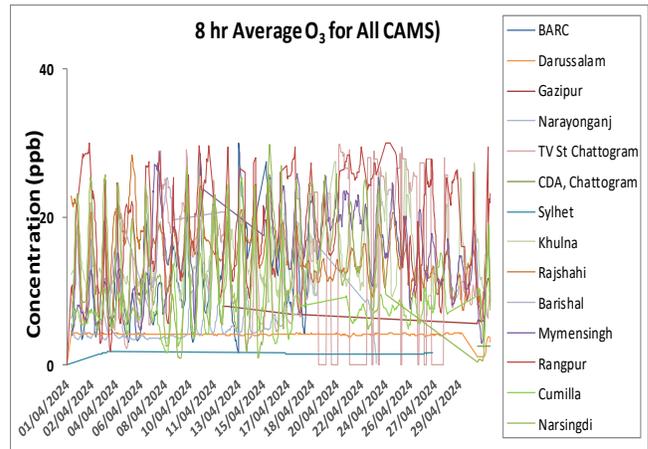
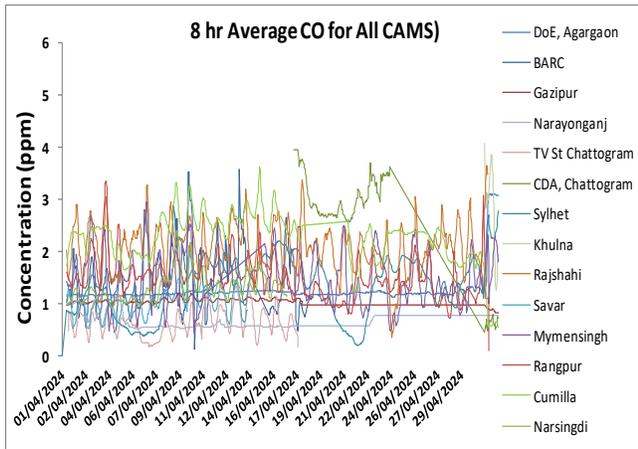
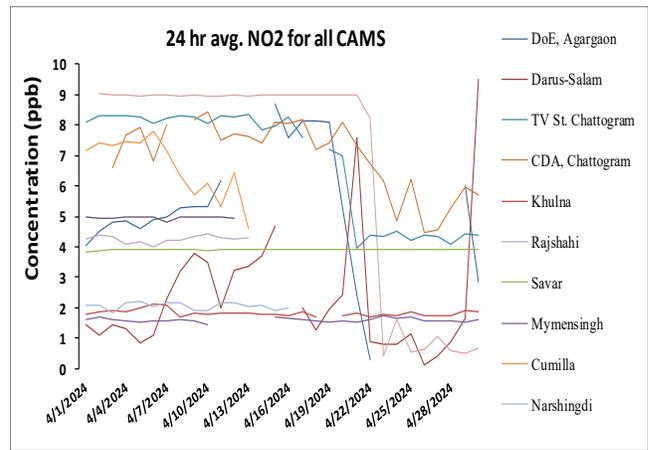
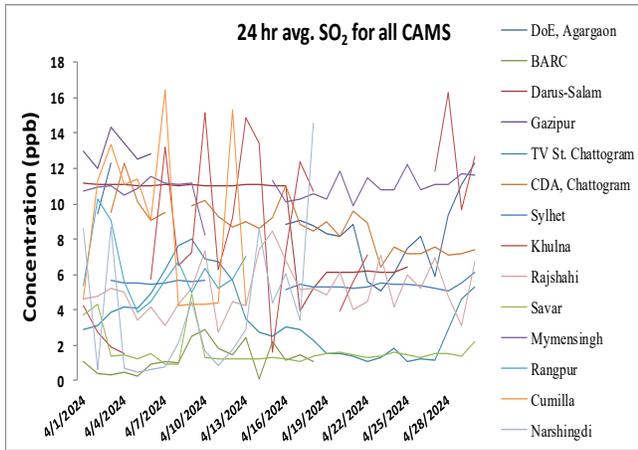
CAMS= Continuous Air Monitoring Station, NAAQS=National Ambient Air Quality Standard, a=Refurbishment CAMS, PM= Particulate Matter

DNA= Data Not Available

Table 6 Air Quality Index (AQI)_ Month of April, 2024

Date	Dhaka	Chittagong	Gazipur	Narayangonj	Sylhet	Khulna	Rajshahi	Barisal	Savar	Mymensingh	Rangpur	Cumilla	Norshindi
4/1/2024	145	DNA	131	83	61	125	171	101	138	159	190	139	147
4/2/2024	145	DNA	177	DNA	86	117	161	140	159	230	182	150	144
4/3/2024	137	DNA	DNA	151	61	106	127	127	159	205	242	155	144
4/4/2024	147	107	151	DNA	61	112	164	95	158	194	278	155	154
4/5/2024	145	82	156	DNA	62	88	162	86	161	167	213	157	150
4/6/2024	150	109	160	DNA	60	107	203	146	165	197	222	152	155
4/7/2024	152	144	163	DNA	54	135	190	135	160	187	192	172	162
4/8/2024	165	DNA	197	DNA	175	118	140	117	174	182	220	194	177
4/9/2024	172	110	181	DNA	97	144	174	149	207	202	253	217	183
4/10/2024	196	165	187	DNA	98	27	226	173	231	179	246	270	185
4/11/2024	166	154	DNA	DNA	108	26	199	165	194	DNA	258	197	167
4/12/2024	180	159	DNA	DNA	102	159	169	163	187	DNA	198	173	168
4/13/2024	193	155	DNA	DNA	118	165	178	160	199	DNA	222	192	DNA
4/14/2024	188	172	DNA	DNA	132	136	193	162	196	DNA	258	244	192
4/15/2024	173	182	125	180	135	162	178	150	184	211	219	225	189
4/16/2024	147	165	119	154	138	107	164	120	165	199	234	219	110
4/17/2024	147	134	169	158	123	125	154	104	159	209	225	157	151
4/18/2024	147	111	DNA	DNA	DNA	70	173	103	150	152	195	DNA	DNA
4/19/2024	136	106	DNA	DNA	DNA	DNA	200	96	156	157	174	DNA	DNA
4/20/2024	119	99	DNA	DNA	61	82	207	82	129	170	179	DNA	DNA
4/21/2024	108	96	DNA	DNA	63	104	168	104	113	173	185	140	DNA
4/22/2024	134	96	DNA	DNA	86	94	172	93	153	199	195	159	DNA
4/23/2024	136	114	DNA	129	93	174	155	103	156	191	200	163	DNA
4/24/2024	146	112	173	154	84	100	131	121	161	187	177	172	DNA
4/25/2024	146	DNA	DNA	140	82	80	161	128	169	205	191	80	DNA
4/26/2024	145	DNA	DNA	124	80	56	165	DNA	161	198	203	161	DNA
4/27/2024	112	148	DNA	121	116	64	125	DNA	131	149	184	148	DNA
4/28/2024	147	155	DNA	DNA	67	112	151	DNA	158	188	232	162	DNA
4/29/2024	129	139	DNA	151	81	121	149	104	149	188	190	167	DNA
4/30/2024	120	104	145	125	75	147	174	87	169	225	209	157	DNA

Table 7 Graphical representation of Gaseous and Particulate matter.



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