AIR QUALITY MONITORING @ 40 FEET HEIGHT – Report Date: 17.12.2022
(BASED ON US-EPA AQI STANDARDS AND THE DAYALBAGH AQI COLOUR CODE)

Permissible Limits (24 Hour Mean): PM_{10} = 150; $PM_{2.5}$ = 35, all units are in $\mu g/m^3$ Sampling Duration = 24 hrs (9:00 AM to 9:00 AM)
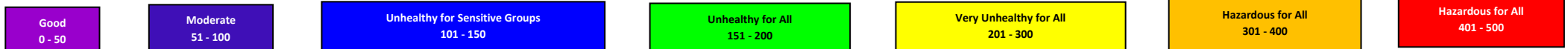
Today: 16-12-2022 to 17 -12-2022 from 9:00 a.m. to 9:00 a.m. **Yesterday:** 15 -12-2022 to 16-12-2022 from 9:00 a.m. to 9:00 a.m.

DAYALBAGH (TIME WEIGHTED AVERAGE DATA)

LOCATION	AQI $PM_{2.5}$ Today	AQI $PM_{2.5}$ Yesterday	AQI PM_{10} Today	AQI PM_{10} Yesterday	RH %	WS m/s	WD	T °C Max	T °C Min	SR W/m²	RF mm
4 / 97	156 (51%↑)	119	68 (38%↑)	56	69	0.4	WNW	25.9	8.0	119	0
3 / 34	110 (62%↑)	76	44 (51%↑)	29	69	0.4	WNW	25.9	8.0	119	0
Science Faculty	115 (32%↑)	91	40 (26%↑)	31	69	0.4	WNW	25.9	8.0	119	0

SANJAY PLACE AND AVAS VIKAS (ARITHMETIC MEAN DATA)

LOCATION	AQI $PM_{2.5}$ Today	AQI $PM_{2.5}$ Yesterday	AQI PM_{10} Today	AQI PM_{10} Yesterday	RH %	WS m/s	WD	T °C Max	T °C Min	SR W/m²	RF mm
Sanjay Place	172 (92%↑)	137	140 (96%↑)	83	60	0.9	WNW	25.0	10.9	126	0
Avas Vikas	163 (69%↑)	127	94 (75%↑)	64	71	0.5	NE	27.1	9.4	64	0

Views of AQI Research Group: Concentrations of Particulate matter have increased at all sites of Dayalbagh due to stagnant meteorological conditions associated with increase in Relative Humidity, low Wind Speed and decrease in Temperature. The Air Quality Index w.r.t. $PM_{2.5}$ has changed to *Unhealthy for All* category at Vidyut Nagar and in the *Unhealthy for Sensitive Groups* category at Prem Nagar and Science Faculty while w.r.t. PM_{10} it remains in the *Good* category at Prem Nagar and Science Faculty and in the *Moderate* category at Vidyut Nagar.

Concentrations of Particulate Matter have substantially increased at Sanjay Place and Avas Vikas, Bodla also. The Air Quality Index w.r.t $PM_{2.5}$ at both these sites has changed to the *Unhealthy for All* category while w.r.t PM_{10} it remains in the *Moderate* category at Avas Vikas, Bodla and has changed to the *Unhealthy for Sensitive Groups* category at Sanjay Place.

Values in parentheses indicate the percentage change in the pollutant concentrations with respect to yesterday. ↑indicates increase while ↓ indicates decrease in pollutant concentrations. Percentage change has not been shown w.r.t. AQI values as the breakpoints for the different categories are not evenly distributed.

Good 0 - 50	Moderate 51 - 100	Unhealthy for Sensitive Groups 101 - 150	Unhealthy for All 151 - 200	Very Unhealthy for All 201 - 300	Hazardous for All 301 - 400	Hazardous for All 401 - 500

NOTE: 1 A continuing study conducted as part of **Dayalbagh Sigma Six Qualities and Values Model** implementation.

2 DEI is using United States Environmental Protection Agency (USEPA) methodology and online calculators to calculate AQI. For fair comparison with UPPCB Sanjay Place Weather Station readings, their $PM_{2.5}$ concentration readings are fed in USEPA online calculator for AQI calculation.

3 Formula for AQI calculation for a Pollutant –

$$I = \frac{I_{high} - I_{low}}{C_{high} - C_{low}} * (C - C_{low}) + I_{low}$$

where: I = Air Quality Index; C = Pollutant Concentration ($PM_{2.5}$); C_{low} = Concentration Breakpoint ≤C; C_{high} = Concentration Breakpoint ≥C; I_{low} = Index Break point corresponding to C_{low}; I_{high} = Index Breakpoint corresponding to C_{high}; *Multiplication Sign

Communicated by Dr. Anita Lakhani, Professor, Department of Chemistry, Faculty of Science, Dayalbagh Educational Institute, Dayalbagh, Agra.