AIR QUALITY MONITORING @ 40 FEET HEIGHT – Report Date: 12.12.2022

(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 µg/m^3 Sampling Duration = 24 hrs (9:00 AM to 9:00 AM)

Today: 11-12-2022 to 12 -12-2022 from 9:00 a.m. to 9:00 a.m. **Yesterday:** 10 -12-2022 to 11-12-2022 from 9:00 a.m. to 9:00 a.m.

LOCATION	DAYALBAGH (TIME WEIGHTED AVERAGE DATA)											LOCATION	SANJAY PLACE AND AVAS VIKAS (ARITHMETIC MEAN DATA)										
	AQI				Meteorological Parameters								AQI				Meteorological Parameters						
	$PM_{2.5}$		PM_{10}					T °C					$PM_{2.5}$		PM_{10}					T °C			
	Today	Yesterday	Today	Yesterday	RH %	WS m/s	WD	Max	Min	SR W/m^2	RF mm		Today	Yesterday	Today	Yesterday	RH %	WS m/s	WD	Max	Min	SR W/m^2	RF mm
4 / 97	110 (50%↓)	163	54 (48%↓)	83	68	0.8	WNW	29.0	12.5	118	0	Sanjay Place	149 (56%↓)	187	80 (55%↓)	150	59	2.5	NW	28.5	14.9	126	0
3 / 34	102 (39%↓)	153	44 (43%↓)	65	68	0.8	WNW	29.0	12.5	118	0	Avas Vikas	149 (53%↓)	183	70 (49%↓)	115	69	0.7	ENE	28.9	14.9	70	0
Science Faculty	134 (35%↓)	162	49 (31%↓)	62	68	0.8	WNW	29.0	12.5	118	0												

Views of AQI Research Group: Concentrations of Particulate matter have substantially decreased at all sites of Dayalbagh due to decrease in Relative Humidity and increase in Wind Speed. The Air Quality Index w.r.t. $PM_{2.5}$ has improved to the *Unhealthy for Sensitive Groups* category while w.r.t. PM_{10} it has improved to the *Good* category at Prem Nagar and Science Faculty and remains in the *Moderate* Category at Vidyut Nagar.

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

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.