AIR QUALITY MONITORING @ 40 FEET HEIGHT – Report Date: 31.12.2022

(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: 30 -12-2022 to 31 -12-2022 from 9:00 a.m. to 9:00 a.m. **Yesterday:** 29 -12-2022 to 30-12-2022 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	166 (60%↑)	144	82 (72%↑)	57	74	1.1	WNW	25.3	11.3	67	0	Sanjay Place	161 (38%↑)	147	96 (18%↑)	85	77	1.8	ENE	23.5	10.7	21	0
3 / 34	157 (45%↑)	127	76 (51%↑)	58	74	1.1	WNW	25.3	11.3	67	0	Avas Vikas	165 (43%↑)	152	82 (34%↑)	67	81	0.8	ENE	26.1	11.5	52	0
Science Faculty	165 (27%↑)	144	68 (16%↑)	62	74	1.1	WNW	25.3	11.3	67	0												

Views of AQI Research Group: Concentrations of both $PM_{2.5}$ and PM_{10} have increased at all sites of Dayalbagh probably due to change in Wind Direction and increase in Relative Humidity (Very low Visibility (<60m) was recorded between 12 - 2am today). Average Visibility yesterday was 2.0 Kms, it decreased to 0.9 Km today. The Air Quality Index w.r.t. $PM_{2.5}$ changed to the *Unhealthy for All* category while w.r.t. PM_{10} it is in the *Moderate* category at all the three sites.

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

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