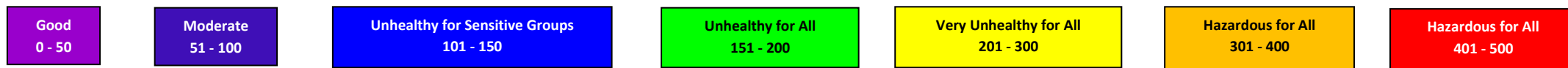# Radhasoami Dayal Ki Daya Radhasoami Sahai

AIR QUALITY MONITORING @ 40 FEET HEIGHT – Report Date: 4.8.2022
(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/m³   Sampling Duration = 24 hrs (9:00 AM to 9:00 AM)

Date (Today: August 4 – 3; Yesterday August 3 – 2)		DAYALBAGH (TIME WEIGHTED AVERAGE DATA)								Date (Today: August 4 – 3; Yesterday August 3 – 2)		SANJAY PLACE (ARITHMETIC MEAN DATA)							
		Air Quality Index		Meteorological Parameters								AQI		Meteorological Parameters					
		$PM_{2.5}$	PM_{10}	RH %	WS m/s	WD	T °C Max	T °C Min	SR W/m²	RF mm			$PM_{2.5}$	PM_{10}	RH %	WS m/s	WD	T °C Max	T °C Min	SR W/m²	RF mm
4 / 97	Today	70	31	75	0.9	ESE	38.6	27.1	140	0	Today		97	51	73	1.0	N	37.2	28.7	145	0
	Yesterday	29	16	68	1.9	NNE	39.2	28.3	198	0											
3 / 34	Today	89	41	75	0.9	ESE	38.6	27.4	140	0											
	Yesterday	50	18	68	1.9	NNE	39.1	28.1	198	0	Yesterday		66	36	66	2.2	SE	37.9	29.6	215	0
Science Faculty	Today	80	30	75	0.9	ESE	38.3	27.4	140	0											
	Yesterday	50	16	68	1.9	NNE	39.3	28.5	198	0											

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

Views of AQI Research Group: In comparison to yesterday, concentrations of $PM_{2.5}$ and PM_{10} have significantly increased at all locations of Dayalbagh. The Air Quality Index w.r.t. $PM_{2.5}$ has changed from *Good* to the *Moderate* category, while w.r.t. PM_{10} it still remains in the *Good* category at all three locations of Dayalbagh.

At Sanjay Place also, the concentrations of both $PM_{2.5}$ and PM_{10} have increased. The Air Quality Index w.r.t both $PM_{2.5}$ and PM_{10} is in the *Moderate* category.

The increase in particulate matter concentrations may probably be ascribed to increase in Relative Humidity and decrease in Solar Insolation, which might have enhanced atmospheric physical processes like coagulation, agglomeration and chemical reactions producing secondary particulate matter. A partial contribution may also be associated to the change in Wind Direction.

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.