



Central Pollution Control Board  
Delhi 110032

## Press Release

### **Ambient Air and Noise Pollution Levels - Deepawali 2012**

#### **Background**

Like previous years, the Central Pollution Control Board, Delhi has conducted an in-depth Ambient Air quality and Noise monitoring for the city of Delhi during celebration of Deepawali festival for the year 2012 (November 13, 2012) to see the overall impact of bursting crackers on Ambient Air Environment.

#### **Executive Summary**

Intensive ambient air monitoring was carried at selected six (06) locations and ambient noise monitoring was undertaken at nine (09) locations across the Delhi City (Manual) and Real Time Continuous Ambient Noise Monitoring was conducted at 35 locations in seven cities (Delhi, Mumbai, Chennai, Kolkata, Lucknow, Bangalore and Hyderabad), while data obtained from six (06) on-line stations were also taken into account.

The **findings of the monitoring** are summarized below:

**Noise level** during Deepawali, 2012 in Delhi (Manual) showed a decreasing trend was observed as compared to Deepawali 2011 (October 26, 2011). This may be attributed to bursting of less noisy crackers.

When compared real time noise level, in comparison to sound level during Deepawali-2011, it has been observed that sound level in 04 cities (Bangalore, Delhi, Kolkata and Hyderabad) shows decreasing trend whereas no change in sound level is observed in Mumbai. However, sound level at Lucknow and Chennai shows slight variation in comparison to Deepawali-2011.

**Air pollutant levels** during 2012 Deepawali Day (November 13, 2012) were found to be **higher** as compared to Deepawali, 2011 (October 26, 2011), which can be **attributed to adverse meteorological conditions, or bursting of less noisy crackers:**

- a. **Decrease in** 24 hourly average temperatures to **20.2°C** on November 13, 2012 as compared to **26.4°C** on October 26, 2011
- b. **Decreased** night time mixing height to **211** metre on November 13, 2012 from **255** meter on October 26, 2011.
- c. **Low** wind speed of **0.43 m/sec.** in 2012 as compared to wind speed of 1.1 m/sec in 2011.
- d. **Increased** humidity profile to **68%** on November 13, 2012 as compared 39% on October 26, 2011.

## **Report**

### **Ambient Air & Noise Pollution Levels - Deepawali 2012**

The Central Pollution Control Board has conducted Ambient **Air quality & Noise** monitoring at various locations in Delhi on the occasion of Deepawali festival, 2012 to see the impact of bursting crackers on environment. The following investigations were conducted:

1. The Ambient noise level monitoring was carried out at **Nine** locations in Delhi namely Lajpat Nagar, Mayur Vihar (Phase – II), Pitam Pura, Kamla Nagar, Dilshad Garden, East Arjun Nagar, Ansari Nagar (AIIMS), Connaught Place and Pragati Maidan (shifted from ITO this year) between 18.00 hours & 24.00 hours (during Deepawali celebration hours) on November 13, 2012. Ambient Noise level monitoring data for Pre-Deepawali background monitoring was carried out at same locations & time on November 06, 2012. The manual data for Delhi is presented in **Table – 1** and for real time noise monitoring data for others cities is presented in **Table – 2**.
2. Round-the-clock Ambient Air quality monitoring was carried out on November 13, 2012 (Deepawali day) at **Seven** monitoring stations of CPCB namely Pragati Maidan Metro Station, Pitampura, Siri Fort, Janakpuri, Nizamuddin, Shahzada Bagh, and Shahdara. The air quality data is presented in **Table -3**
3. Meteorological profile (temperature, relative humidity, wind speed, wind direction and mixing height) was also monitored and the data is presented at **Table -4** Average temperature on November 13, 2012 was **20.2<sup>0</sup>C** as compared to 26.4<sup>0</sup>C in 2011; relative humidity was **68 %** in 2012 as compared to 39 % in 2011. Mixing height decreased to **211** meters (2012) from 255 meters (2011).

## Findings of Ambient Air Quality Monitoring

### Sulphur dioxide (SO<sub>2</sub>):

Sulphur dioxide concentration on Deepawali day 2012 **increased** at **nine** locations, while the values **decreased at three** locations as compared to Deepawali day 2011. During Deepawali day, 2012 SO<sub>2</sub> ranged between **13 and 63** µg/m<sup>3</sup> as compared to 4 and 40 µg/m<sup>3</sup> during Deepawali day in 2011. SO<sub>2</sub> levels have been found **within** the prescribed standard of 80 µg/m<sup>3</sup> at all the locations.

### Nitrogen dioxide (NO<sub>2</sub>):

Nitrogen dioxide concentration on Deepawali day in 2012 increased at **all the** locations as compared to Deepawali day 2011. NO<sub>2</sub> values during Deepawali day 2012 ranged between **44 and 85** µg/m<sup>3</sup> as compared to 27 and 56 µg/m<sup>3</sup> in 2011. The NO<sub>2</sub> levels are **within** the prescribed standard of 80 µg/m<sup>3</sup> at all locations except Pragati Maidan.

### Particulate Matter (PM<sub>10</sub>):

PM<sub>10</sub> levels have shown an increasing trend at all the locations on Deepawali day, 2012 as compared to 2011. RSPM values during Deepawali day, 2012 ranged between **748 and 951** µg/m<sup>3</sup> as compared to 416 and 635 µg/m<sup>3</sup> during Deepawali, 2011.

Increased PM<sub>10</sub> values in general may be **attributed to adverse meteorological conditions, i.e. decrease** in temperature, mixing height, wind speed and increase in relative humidity profile.

## Findings of Ambient Noise Level Monitoring – Deepawali, 2012

- The ambient noise level at all the locations on Deepawali day, 2012 (November 13, 2012) have increased as compared to normal day (pre Deepawali – November 06, 2012).
- **Noise level** during Deepawali, 2012 showed a decreasing trend, **while no change at remaining locations** as compared to Deepawali 2011 (October 26, 2011). Which may be attributed to bursting of less noisy crackers.
- The maximum Noise Level was found at Lajpat Nagar [**81** dB(A)] followed by Kamla Nagar [**80** dB(A)].
- It has been observed that sound level in 04 cities (Bangalore, Delhi, Kolkata and Hyderabad) shows decreasing trend whereas no change in sound level is observed in Mumbai. However, sound level at Lucknow and

Chennai shows slight variation in comparison to Deepawali-2011.

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**Table- 1:**  
**Ambient Noise Level at different places in Delhi**  
**during Normal & Deepawali days in the year 2011-2012**

S. No.	Location	Average Noise Level in dB (A) Leq.			
		Normal Day		Deepawali Day	
		2011	2012	2011	2012
01.	Lajpat Nagar (R)	67	58 ↓	81	81 =
02.	East Arjun Nagar (R)	57	57 =	74	74 =
03.	Mayur Vihar Phase – II (R)	79	48 ↓	91	73 ↓
04.	Pitam Pura (R)	58	56 ↓	75	75 =
05.	Kamla Nagar (R)	58	61 ↑	81	80 ↓
06.	Dilshad Garden (R)	56	58 ↑	80	78 ↓
07.	Ansari Nagar) (R)	56	58 ↑	76	76 =
08.	Connaught Place (C)	64	64 =	69	69 =
09.	I.T.O (C)	72	70 ↓	71	71 =

Monitoring time: **1800 hours to 2400 hours.**

R – Residential, C – Commercial

Deepawali Day 2012 – 13<sup>th</sup> November, Normal day: 06<sup>th</sup> November 2012

Deepawali Day 2011 – 26<sup>th</sup> October, Normal day: 19<sup>th</sup> October 2011

**Table - 2**

**REAL TIME AMBIENT NOISE LEVELS IN 07 METRO CITIES  
DURING DEEPAWALI 2011 AND 2012**

Real Time Continuous Ambient Noise Monitoring was conducted at 35 locations in seven cities (Delhi, Mumbai, Chennai, Kolkata, Lucknow, Bangalore and Hyderabad) on the occasion of Deepawali 13/11/2012 and 26/10/2011 and data is presented in table below

SL.NO	City	Stations	2011 Leq (24 hrs)	2012 Leq (24hrs)
1.	<b>Bangalore</b>	Nisarga Bhawan	60	51
2.		Parisar Bhwan	64	62
3.		BTM	65	63
4.		Marathalli	57	55
5.		Pinya	59	57
6.	<b>Chennai</b>	Triplicane	69	63
7.		T. Nagar	69	70
8.		Guindy	75	74
9.		Perambur	75	86
10.		Eye Hospital	65	60
11.	<b>Delhi</b>	NSIT	64	56
12.		CPCB	61	58
13.		DCE	53	50
14.		Dilshad Garden	57	49
15.		ITO (Pragati Maidan)	74	74
16.	<b>Hyderabad</b>	Abits	71	70
17.		Jeedimetla	61	61
18.		Jubilee Hills	-	54
19.		Punjagutta	75	76
20.		Zoo	-	52
21.	<b>Kolkata</b>	Head Quarter (WBPCB)	60	59
22.		New Market (Municipal	64	64

		Corporation)		
23.		Patauli	57	54
24.		SSKM Hospital	59	59
25.		Golpark	64	64
26.	<b>Lucknow</b>	Indira Nagar	54	51
27.		PGI Hospital	-	54
28.		Gomti Nagar	-	60
29.		Hajrat Ganj	68	69
30.		Talkatora Industrial Area	59	61
31.	<b>Mumbai</b>	Acworth Hospital (ASHP)	64	64
32.		Bandra	69	69
33.		Thane (TMCO)	62	59
34.		Vashi Hospital	66	65
35.		MPCB, HQ	64	66
<b>Note:-All values are measured in Leq [dB(A)]</b>				

In comparison to sound level during Deepawali-2011, it has been observed that sound level in 04 cities (Bangalore, Delhi, Kolkata and Hyderabad) shows decreasing trend whereas no change in sound level is observed in Mumbai. However, sound level at Lucknow and Chennai shows slight variation in comparison to Deepawali-2011.

**Table-3**  
**Ambient Air Quality at Various Locations (NAMP) during**  
**Deepawali 2011 & 2012**

Sl. No.	Day→	Normal Day (Pre-Deepawali)						Deepawali Day					
	Parameter→	SO <sub>2</sub>		NO <sub>2</sub>		PM <sub>10</sub>		SO <sub>2</sub>		NO <sub>2</sub>		PM <sub>10</sub>	
	Year→	2011	2012	2011	2012	2011	2012	2011	2012	2011	2012	2011	2012
01.	Pragati Maidan / ITO*	13	24	78	130	208	537	28	13	56	85	416	795
02.	Pitampura (R)	7	7	34	58	184	648	22	17	27	58	428	776
03.	Sirifort (R)	10	23	75	77	292	529	25	19	30	67	635	760
04.	Janakpuri (R)	4	5	52	53	323	477	40	63	31	69	441	951
05.	Nizamuddin (R)	4	4	46	50	220	457	21	25	46	69	421	748
06.	Shahazada Bagh (I)	6	4	58	61	301	497	35	13	45	64	438	820
07.	Shahdara (I)	6	4	59	64	486	452	11	20	28	44	497	928
	<i>Concentration Range for Delhi (above stations)</i>	4-13	4-24	34-78	53-130	184-486	452-648	11-40	13-63	27-56	44-85	421-635	748-951
	<i>Ambient Air quality Standards (24 Hrs.)</i>	<b>80</b>		<b>80</b>		<b>100</b>		<b>80</b>		<b>80</b>		<b>100</b>	

*All values are in microgram per cubic meter*  
Normal Day 2012: November 6, 2012 (Tuesday);  
Deepawali Day 2012: November 13, 2012 (Tuesday)

- Station shifted from ITO to Pragati Maidan Metro Station in 2012



**Table-4**  
**METEOROLOGICAL INFORMATION**  
**DEEPAWALI, 2011 & 2012**

Day→	Normal Day						Deepawali Day					
Parameters↓	24 Hourly Avg.		Maximum*		Minimum*		24 Hourly Avg.		Maximum*		Minimum*	
Year→	2011	2012	2011	2012	2011	2012	2011	2012	2011	2012	2011	2012
Mixing Height (Mtrs.)	604	399↓	1664	1303↓	150	100↓	547	432↓	1494	1155↓	170	140↓
Wind Speed(m/s)	0.5	0.43↓	1.8	0.47↓	0.01	0.36↑	1.1	0.43↓	1.9	0.47↓	0.4	0.37↓
Prevailing Wind Direction	W, WNW	NE	% calm: 47.8				W	SW	% calm: Nil			
Temperature (°C)	28.1	21.1↓	34.2	26.9↓	23.0	17.1↓	26.4	20.2↓	31.3	26.5↓	21.7	14.4↓
Relative Humidity (%)	41	71↑	54	92↑	19	51↑	39	68↑	54	92↑	28	46↑