



**Central Pollution Control Board  
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**Press Release**

**Ambient Air and Noise Pollution Levels - Deepawali 2009**

**Executive Summary**

The Central Pollution Control Board has conducted an in-depth Ambient Noise & Air quality monitoring for the city of Delhi during celebration of Deepawali festival for the year 2009 (**October 17, 2009**) to see the impact of bursting crackers on Environment. Intensive ambient air monitoring was carried at selected seven locations, while ambient noise monitoring was undertaken at nine locations in the city. The **findings of the monitoring** are summarized below:

- **Noise level** during Deepawali, 2009 increased at three locations, decreased at one and no significant change at remaining locations as compared to Deepawali 2008 (October 28). Increase in Noise Level at some locations could be attributed to bursting of noisy crackers. The maximum Noise Level was found to have reduced to 82 dB(A) in 2009 from 85dBA observed in 2008.
- **Air pollution levels** during 2009 were found to be generally lower as compared to Deepawali, 2008 (October 28) except Sulphur Dioxide. Decrease in particulate matter, SPM as well as RSPM, at all the locations and Nitrogen Dioxide at most of the locations due to favorable meteorological conditions. Increase in Sulphur dioxide may be attributed to more use of Sulphur containing crackers (lightning & imported). However the concentration of Sulphur dioxide at all the locations was well within the prescribed residential standard.

The findings of the study also reveal that concentration of all pollutants including noise was at its peak from 09.00 PM to 12.00 Night.

## Report

### Ambient Air & Noise Pollution Levels - Deepawali 2009

The Central Pollution Control Board has conducted Ambient **Noise & Air** quality monitoring at various locations in Delhi on the occasion of Deepawali festival, 2009 to see the impact of bursting crackers on environment. The following investigations were conducted:

1. Round-the-clock Ambient Air quality monitoring was carried out on October 17, 2009 (Deepawali day) at seven monitoring stations of CPCB namely BSZ Marg (ITO), Pitampura, Siri Fort, Janakpuri, Nizamuddin, Shahzada Bagh and Shahdara. The air quality data is presented in **Table -1**.
2. The Ambient noise level monitoring was carried out at nine locations in Delhi namely Lajpat Nagar, East Arjun Nagar, Mayur Vihar (Phase – II), Pitam Pura, Kamla Nagar, Dilshad Garden, Ansari Nagar (AIIMS), Connaught Place and ITO between 18.00 hours & 24.00 hours (during Deepawali celebration hours) on October 17, 2009. Ambient Noise level monitoring data for Pre-Deepawali background monitoring was carried out at same locations & time on September 30, 2009. The noise level data is presented in **Table – 2**.
3. Meteorological profile (temperature, humidity, wind speed, wind direction and mixing height) was also monitored. Average temperature on Deepawali Day 2009 was 25.2<sup>o</sup>C as compared to 23.8<sup>o</sup>C in 2008; humidity was 49.8% in 2009 as compared to 60.8% in 2008 and Wind speed of 0.20 m/s in 2009 against 0.13 m/s during 2008. Mixing height during peak Deepawali hours (18 – 24 hours) increased from 143 meters (2008) to 186 meters (2009).

**Table- 1: Ambient Air Quality at Various Locations during Deepawali 2008 & 2009**

*(All Values are in microgram per cubic metre)*

Parameter→		SO <sub>2</sub>		NO <sub>2</sub>		SPM		RSPM	
Year→		2008	2009	2008	2009	2008	2009	2008	2009
<b>B.S.Z Marg (ITO)</b>		14	17↑	83	65↓	692	688↓	578	478↓
<b>Pitampura (R)</b>		9	8↓	33	40↑	1166	739↓	712	469↓
<b>Sirifort (R)</b>		7	37↑	56	54↓	1059	664↓	901	580↓
<b>Janakpuri (R)</b>		24	42↑	81	32↓	1331	581↓	931	466↓
<b>Nizamuddin (R)</b>		9	19↑	61	55↓	911	522↓	703	414↓
<b>Shahazada Bagh (I)</b>		21	27↑	78	48↓	1097	976↓	719	611↓
<b>Shahdara (I)</b>		19	21↑	83	27↓	945	724↓	708	486↓
<b>Concentration Range for Delhi</b>		<b>7 - 24</b>	<b>8 - 42</b>	<b>33 - 83</b>	<b>27 - 65</b>	<b>692 - 1331</b>	<b>522 - 976</b>	<b>578 - 931</b>	<b>414 - 611</b>
<b>Ambient Air quality Standards</b>	<b>Residential (R)</b>	<b>80</b>		<b>80</b>		<b>200</b>		<b>100</b>	
	<b>Industrial (I)</b>	<b>120</b>		<b>120</b>		<b>500</b>		<b>150</b>	

Deepawali Day 2008 – 28 October (Tuesday)

Deepawali Day 2009 – 17 October (Saturday)

**Table- 2: Ambient Noise Level at different places in Delhi during Normal & Deepawali days in the year 2008-2009**

S. No.	Location	Average Noise Level in dB (A) Leq.				Standard Limit
		Normal Day		Deepawali Day		
		2008	2009	2008	2009	
01.	Lajpat Nagar (R)	66	61	76	75	<b>55</b>
02.	East Arjun Nagar (R)	55	58	74	76	
03.	Mayur Vihar Phase – II (R)	53	66	85	82	
04.	Pitam Pura (R)	57	58	76	74	
05.	Kamla Nagar (R)	64	62	76	76	
06.	Dilshad Garden (R)	61	54	72	76	
07.	Ansari Nagar) (R)	59	57	76	81	
08.	Connaught Place (C)	66	62	67	71	<b>65</b>
09.	I.T.O (C)	69	70	70	71	

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

Normal day: 30<sup>th</sup> September 2009.

R – Residential, C – Commercial

Deepawali Day 2008 – 28 October (Tuesday)

Deepawali Day 2009 – 17 October (Saturday)

## **Findings of Ambient Air Quality Monitoring**

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

Out of total seven locations monitored, Sulphur dioxide concentration on Deepawali day, 2009 increased at six locations, while decreased at one location as compared to Deepawali day, 2008. During Deepawali day, 2009, concentration of SO<sub>2</sub> ranged between 8 and 42µg/m<sup>3</sup> as compared to 7 and 24µg/m<sup>3</sup> during Deepawali day, 2008. Levels of SO<sub>2</sub> (24 hourly average) have been found within the prescribed residential area standard of 80 µg/m<sup>3</sup> at all the locations. Maximum concentration of Sulphur Dioxide was observed at Janak Puri during 2009 (42 µg/m<sup>3</sup>) which was also maximum in 2008 (24 µg/m<sup>3</sup>).

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

Nitrogen dioxide concentrations on Deepawali day, 2009 has decreased at six locations out of seven locations monitored, increased at one location as compared to Deepawali day, 2008. The NO<sub>2</sub> concentration at all the locations was within the prescribed residential area standard of 80µg/m<sup>3</sup>. NO<sub>2</sub> values during Deepawali day 2009 ranged between 27 and 65µg/m<sup>3</sup> as compared to 33 and 83 µg/m<sup>3</sup> in 2008. Decrease Nitrogen Dioxide concentration could also be attributed to lesser number of vehicles plying on the roads being weekend.

### **Suspended Particulate Matter (SPM):**

SPM levels have shown decreasing trend at all the locations on Deepawali day, 2009 as compared to 2008. SPM levels during Deepawali day, 2009 ranged between 522 and 976µg/m<sup>3</sup> against the level of 692 and 1331 µg/m<sup>3</sup> during Deepawali, 2008. The highest SPM of 976µg/m<sup>3</sup> was observed at Shahzada Bagh and lowest of 522µg/m<sup>3</sup> was observed at Nizamuddin

### **Respirable Suspended Particulate Matter (RSPM):**

RSPM levels in Deepawali 2009 have also shown decreasing trend at all the locations as compared to 2008. RSPM values during Deepawali day, 2009 ranged between 414 and 611µg/m<sup>3</sup> as compared to 578 and 931µg/m<sup>3</sup> during Deepawali, 2008. The highest RSPM of 611µg/m<sup>3</sup> was observed at Shahzada Bagh and lowest of 414µg/m<sup>3</sup> was observed at Nizamuddin

## **Conclusion:**

**Decrease in SPM, RSPM and NO<sub>2</sub> values in general may be attributed to favorable meteorological conditions like increase in temperature from 24.5 °C (2008) to 25.2 °C (2009), wind speed from 0.13 m/sec (2008) to 0.20 m/sec (2009), Mixing Height from 143 meters in 2008 to 186 meters in Deepawali, 2009. Also humidity decreased from 60.8% (2008) to 49.8% (2009). However the SO<sub>2</sub> levels increased at several locations which could be attributed to use of more Sulphur containing (lightning and imported) crackers**

## **Findings of Ambient Noise Level Monitoring – Deepawali, 2009**

- The ambient noise level at all the locations on Deepawali day, 2009 has increased as compared to normal day (pre Deepawali – September 30, 2009).
- During Deepawali, 2009, out of nine locations monitored ambient noise level has increased at three locations, while decreased at one location and at remaining locations no significant change was observed as compared to Deepawali 2008.
- The average ambient noise levels in 2009 on normal day were ranging from 54 to 70 dB(A) Leq. and on Deepawali day 71 to 82 dB(A) Leq.
- This year average noise levels on Deepawali day were found to be ranging from 71 to 82 dB(A) Leq. against last year average of 67 to 85 dB(A) Leq.
- The maximum Noise Level as was observed in 2008 (85dBA), was found to have reduced to 82 dB(A) in 2009.

## **Conclusion**

**Overall noise level during Deepawali 2009 was higher than Deepawali 2008 due to bursting of more noisy crackers.**

## **Overall Conclusion of Deepawali monitoring 2009**

**Noise levels** during Deepawali, 2009 (October 17) at some locations was higher than Deepawali, 2008 (October 28) because of bursting of noisy crackers.

**Air pollution levels** during 2009(October 17) were also in general found to be lower as compared to Deepawali, 2008 (October 28) mainly because favourable meteorological conditions, however, increase in air pollution due to Sulphur dioxide was observed at some locations due to use of more sulphur containing (lightning and imported) crackers.

The findings of the study also reveal that concentration of all pollutants including noise was at its peak from 09.00 PM to 12.00 Night.

For clarifications and further information contact:

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