

**HARYANA STATE POLLUTION CONTROL BOARD
C-11, SECTOR-6, PANCHKULA
Ph-2577870-73 E-mail: hspcb scientist@gmail.com**

PUBLIC NOTICE

Sealed quotations are invited from approved Laboratories of Ministry of Environment Forest & Climate Change, Govt. of India under the provision of Environmental Protection Act, 1986 for testing of general metals i.e. Pb, Ni & As in PM₁₀ , PM_{2.5} selected metals/elements i.e. Al, Ba, Fe, & Sr in the PM_{2.5} PM₁₀ in Ambient Air Quality samples being collected by the Haryana State Pollution Control Board from 28th October, 2021 to 11th November,2021 at different 09 cities i.e. Panchkula, Ambala, Karnal, Panipat, Sonapat, Gurugram, Faridabad, Hisar and Rohtak as per the prescribed format provided in the terms and conditions which can be downloaded from the website of Haryana State Pollution Control Board (www.hspcb.gov.in). Interested laboratories are advised to send the quotations to Haryana State Pollution Control Board, C-11, Sector-6, Panchkula on or before 1600 hrs on 15.10.2021 either personally or by post or through e-mail (hspcb scientist@gmail.com).

**Dr. Sumita Misra, IAS,
Chairperson, HSPCB**

I/69347/2021

HARYANA STATE POLLUTION CONTROL BOARD
C-11, SECTOR-6, PANCHKULA
Ph. 2577870-73 Email- hspcb scientist@gmail.com

To

Sr. Environmental Engineer (IT)
HSPCB (HQ)

Sub:- To upload the public notice for invite sealed quotation from EPA approved Laboratories for Special Monitoring of Ambient Air Quality on Deepawali Festival, 2021.

Kindly refer to the subject cited above.

In this connection, It is intimated that Board is going do the special Monitoring of Ambient Air Quality on Deepawali Festival, 2021. Board laboratories have not the facilities for analyzing the metals, the same were required to be got analyzed from the EP approved laboratories by inviting quotations. Hence the quotations were quoted from the EP approved laboratories for analyzing the metals through public Notice.

In view of above, you are hereby requested to upload the terms and condition along with public notice to invite the sealed quotation on website of Board.
DA/As above

**Signed by Dr. Rajesh
Garhia
Date: 08-10-2021 10:10:00
Reason: Approved**

**Sr.Scientist
For Chairperson**

**SPEED POST**

No. LB-11/5/2021-AIR_LAB-HO-CPCB-HO

Dated 15.09.2021

To,

The Member Secretary,
Haryana State Pollution Control Board,
C – 11, Sector 6, Panchkula, Haryana.

Sub: Special Monitoring of Ambient Air and Noise levels during Deepawali Festival 2021 – Reg.

Sir,

Hon'ble Supreme Court of India, in writ petition (Civil) No.728 of 2015 directed that CPCB and State Pollution Control Boards / Pollution Control Committees (SPCBs/PCCs) of the States and Union Territories shall carry out short-term monitoring in their cities for 14 days (commencing from 7 days prior to Diwali and ending 7 days after Diwali) for different parameters. The copy of the judgement is available at the website link: www.sci.gov.in/supremecourt/2015/32461_2015/Judgement_23-oct-2018.pdf.

This year, the festival of Deepawali falls on 04th November, 2021 (Thursday). Therefore, it is requested to conduct the noise monitoring on Pre-Deepawali day i.e. 29th October, 2021 (Friday) & Deepawali day on 04th November, 2021 (Thursday) and ambient air quality monitoring for consecutive 15 days commencing from 28th October, 2021 to 11th November, 2021 (i.e. 7 days before and after Deepawali).

For analysis of parameters like PM₁₀, PM_{2.5}, SO₂, NO₂ and metals (Pb, Ni & As in PM₁₀) the CPCB guidelines volume-I may be adopted. For metal / elements analysis in PM_{2.5} (PTFE Filter), EDXRF is the best option, however, other suitable method (ICP-MS/ICP-AES) may also be adopted.

To maintain uniformity in ambient noise and air quality monitoring, the monitoring protocol and data sheets (Annexure-I, II and III) may kindly be adopted. The same uniformity may be followed in the final data reporting with respect to all locations in the form of Annexure-IV & V. The monitoring data may be sent by e-mail to krishnacpcb@yahoo.co.in and apathak.cpcb@nic.in by 19th November, 2021, positively in word / excel format for the report.

The AAQM report may be submitted to Hon'ble Supreme Court by the respective SPCBs & PCCs individually.

Yours faithfully,

(V.K. Shukia)

Addl. Director &
DH-Air Laboratory

Encl.: As above

Protocol for Ambient Level Noise Monitoring

1.0 Purpose:

This protocol presents the protocol for Ambient Noise monitoring to be carried out on routine basis or to address the public complaints. The objective is to monitor the noise level at a particular site or as described in the complaints. The data generated by the method shall also evaluate with prescribed noise level standards.

2.0 Introduction

The unit of noise is decibel, one-tenth of a bell and denotes as d(B), however the monitoring unit is considered as dB(A) Leq denotes the time weighted average 'A' of the level of sound in decibels on **scale A** and it has been found related to **human hearing**. Thus in, dB(A)Leq, denotes the frequency weighting in the measurement of noise and corresponds to frequency response characteristics of the human ear. The unit of frequency is hertz (Hz) and is defined as the number of compressions and rarefactions per unit time (sec.). Human hearing is sensitive to frequencies in the range of about 20-20,000 Hz (the audio frequency range).

Sound pressure is used as the fundamental measure of sound (amplitude) as it is measurable directly by any standard instruments. The weakest sound pressure disturbance that can be detected by an "average" person at 1,000Hz has been found to be $20 \mu\text{N/m}^2$ and the largest $10^7 \mu\text{N/m}^2$. Because of such a wide range, the use of a linear pressure scale has been found to be non-scientific. It has been found convenient to employ sound pressure level, a quality, which is proportional to the logarithm of sound pressure. By this, the sound pressure range of interest is compressed between 0 to 130 dB.

3.0 Site Selection Criteria:

Site of an area shall be selected such that it meets the land use pattern as prescribed in the standard e.g. Industrial, Commercial, Residential & Silence Zone.

(A) General:

1. The station should be located at the ambient level i.e. away from the direct source, away from any vibration and any obstruction.
2. Categorize the area with land use pattern.

(B) Specific:

Always use tripod stand at above the ground level of 1 to 1.5 m for areas. Hand held monitoring should be avoided.

(C) Case Specific Locations:

- DG Sets up to 800 kW at about 1 m distances from all sides. DG Sets more than 800 kW at about 1 m distance of acoustic enclosure. Concerned State PCBs / PCCs may regulate the norms with minimum reduction of 25 dB(A) to see the effectiveness of the enclosure.

- Petrol and Kerosene Gensets Sound power level is measured in anechoic room so as to have segregated noise level.
- Fire crackers 4 m from the bursting point, there shouldn't be reflecting surface around 15m radius.
- Vehicle 0.5m from the exhaust point.

(D) Positioning of the instrument:

- Microphone must be placed 1.2 -1.5m above the ground level.
- In dry conditions with a wind speed of less than 5 m/s.
- Isolate the instrument from strong vibration and shock.

4.0 Selection of Noise level meter:

Noise measurements will be made with a Type 1 integrating sound level meter with free-field microphone which meets the Accuracy of noise measurement as per IEC 804 (BS 6698) Grade I or ANSI Type I or equivalent IEC 61672-1(2002-05) Class-I.

5.0 Calibration:

Make sure that the instrument is properly calibrated. Measurements should be accepted as valid only if the calibration level from before and after the noise measurement agrees to within 1.0 dB. The sound level meter and calibrator will hold a current calibration certificate traceable to national standards.

Start the calibrator and put on 1 KHz frequency calibration on two values 94 dB and 114 dB. If instrument is shows more than ± 0.3 dB differences adjust the calibration. Calibration is done O.K. now instrument is ready for monitoring.

6.0 Monitoring time:

The monitoring should be carried out minimum 75% of the prescribed Day time (06.00 am to 22.00 pm) and Night time (22.00 pm to 06.00 am).The exercise has to be carried out for 6 to 8 hrs. in the said time frame of day & night. It is always preferable to have large number of data sets thus 1sec sampling frequency is recommended.

7.0 Monitoring Parameters:

L_{eq} , L_{10} , L_{90} , L_{50} , L_{max} , L_{min} , (with 1 sec sampling period at all locations).

8.0 Monitoring Protocol:

The following criteria will be observed when undertaking the noise monitoring:

- a) During ambient noise monitoring sound comes from more than one direction, it is important to choose a microphone and mounting which gives the best possible Omni directional characteristics;
- b) The noise measurement equipment will be supervised continuously during the monitoring period and notes will be made of the date, time and prevailing weather conditions;

- c) Immediately prior to and following each noise measurement session the accuracy of the noise level meter shall be checked using an acoustic calibrator generating a known sound pressure level at a known frequency.
- d) Noise measurements should not be made in fog and rain;
- e) A wind shield will be used at all times to prevent interference of reflecting noise;
- f) As far as is practicable, the pause facility on the noise measurement equipment will be used to exclude extraneous noise (e.g. low flying aircraft and road traffic passing in front of the microphone) so that the results recorded are representative of the site noise. If possible for extraneous noise/other source background noise can be eliminated from final reading by using the following formula:

$$L_{\text{pressure}} = 10 \cdot \log [10^{(L_p/10)} - 10^{(L_{p\text{Background}}/10)}]$$

9.0 Monitoring records:

- (i) The date, time, location and duration of the measurement;
- (ii) All predominant noise sources will be noted, which may include extraneous noise such as road traffic, aero-planes and other activity;
- (iii) Weather conditions will be recorded including wind speed and approximate direction, cloud cover, rain and ground frost;

10.0 Monitoring data submission:

The particulars of the measurements recorded by the noise level meter shall be furnished in the monitoring data sheet, as at **Annexure I**. A typical flow chart may be adopted for uniformity in the monitoring.

11.0 Monitoring Inferences:

The monitoring inferences should be drawn on the basis of final data sheet viz. compliance to the specified standard, violation of standard, average L_{eq} , noise intensity L_{50} , L_{90} etc. and suggest corrective action.

Manual Ambient Noise Monitoring Flow Chart

Type of Monitoring

Type of Location
Sensitive/Residential/Commercial/Industrial

Identify the Source for ambient Noise
Locations for monitoring, Calibration of Instrument, Monitoring Duration,
Monitoring data, Data sheet

Follow the procedure as given in protocol for Monitoring

Inferences / Conclusion (Day Time / Night Time)

Further monitoring

Identify the Source for ambient Noise & Suggest control measures

CENTRAL POLLUTION CONTROL BOARD, DELHI
AMBIENT NOISE OF DELHI
Data sheet for Ambient Noise Monitoring

Location:			Date:					
			Time : Day Time / Night Time					
Noise Level Meter								
Make	:							
Model	:							
Serial No.	:							
Calibration Result of Noise Level Meter								
Calibration			94 dB at 1000 Hz			114 dB at 1000 Hz		
Initial								
Final								
Sampling rate								
S. No.	Time duration	File No.	L equivalent dB(A)					
			Leq.	L ₁₀	L ₅₀	L ₉₀	L _{min}	L _{max}
1								
2								
3								
4								
5								
6								
Average L equivalent dB(A)								
Monitoring team & signature								
<p>Notes: (1) The method for calculation of average Leq: To convert average of dB(A), each value is to be divided by 10, followed by antilog and finally calculate arithmetic mean. The final value is converted in logarithm followed by multiplication with 10. (2) monitoring must be carried for 75% of the prescribed day time and night time for legal compliance, (3) L_{max} and L_{min} are to reported hourly basis and (4) L₅₀ & L₉₀ also recorded to understand the intensity of the noise for further course of action.</p>								

(Monitored by)

(Checked by)

Authorized Signatory

CENTRAL POLLUTION CONTROL BOARD, DELHI
AMBIENT AIR QUALITY OF DELHI
DATA SHEET FOR PM₁₀ & PM_{2.5}

Station:				
Date				
Parameter	PM ₁₀			PM _{2.5}
Shift	Ist Shift	IInd Shift	IIIrd Shift	24hour
Monitoring Period	06:00AM-02:00PM	02:00PM-10:00PM	10:00PM-06:AM	06:00AM-06:00AM
Filter Paper No.				
Hourly Flow Rate (m ³ /minute)				
Average Flow Rate (m ³ /minute)				
Total Operation Time (Minutes)				
Initial Weight of Filter Paper (gms.)				
Final Weight of Filter Paper (gms.)				
Dust Contents (gms.)				
Total Volume of Air Sampled (m ³)				
Concentration (µg/m ³)				
24 Hourly Average (µg/m ³):				
Remarks:				
Name & Signature of Official on duty:				

CENTRAL POLLUTION CONTROL BOARD, DELHI
AMBIENT AIR QUALITY OF DELHI
DATA SHEET FOR GASEOUS AIR POLLUTANTS

Annexure-III

Station:													Date:			
Shift	1st Shift						IInd Shift						IIIrd Shift			
Monitoring Period	06:00AM-10:00AM		10:00AM-02:00 PM		02:00PM-06:00PM		06:00PM-10:00PM		10:00PM-02:00AM		02:00AM-06:00AM					
Parameter	SO ₂	NO ₂	SO ₂	NO ₂	SO ₂	NO ₂	SO ₂	NO ₂	SO ₂	NO ₂	SO ₂	NO ₂	SO ₂	NO ₂	SO ₂	NO ₂
Hourly Flow Rate (lpm)																
Average Flow Rate (lpm)																
Total Operation Time (Minutes)																
Initial Volume of Sample (ml)																
Final Volume of Sample (ml)																
Volume Taken For Analysis (ml)																
Total Volume of Air Sampled (lit.)																
Absorbance (Blank)																
Absorbance (Sample)																
Concentration (µg/m ³)																
24 Hourly Average SO ₂ (µg/m ³):													24 Hourly Average NO ₂ (µg/m ³):			
Remarks:																
Name & Signature of Official on duty:																

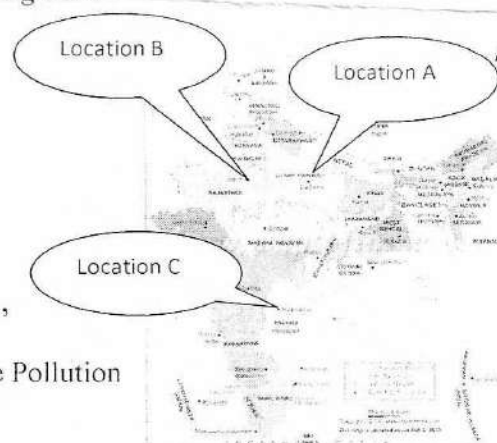
Format of Report: Deepawali Monitoring 2021

City:

- Latitude & Longitude
- Climate/Meteorology
- Population
- Major Land use

Monitoring Locations:

- Map showing all monitoring locations of the city
- Description of monitoring site: Area/ Zone: Industrial (I), Residential (R), Commercial (C) & Silence (S)
- Activities around the monitoring location/Sources of Noise Pollution



Data / Observations:

Ambient Noise Level during Deepawali festival, 2021:

Location: A Area/Zone : I/R/C/S	Pre- Deepawali Day (29.10.2021)			Deepawali Day (04.11.2021)		
	Lmin	Lmax	Leq dB(A)	Lmin	Lmax	Leq dB(A)
Time duration						
18:00 to 19:00 Hr						
19:00 to 20:00 Hr						
20:00 to 21:00 Hr						
21:00 to 22:00 Hr						
22:00 to 23:00 Hr						
23:00 to 24:00 Hr						

Location: B Area/Zone : I/R/C/S	Pre- Deepawali Day (29.10.2021)			Deepawali Day (04.11.2021)		
	Lmin	Lmax	Leq dB(A)	Lmin	Lmax	Leq dB(A)
Time duration						
18:00 to 19:00 Hr						
19:00 to 20:00 Hr						
20:00 to 21:00 Hr						
21:00 to 22:00 Hr						
22:00 to 23:00 Hr						
23:00 to 24:00 Hr						

Location: C Area/Zone : I/R/C/S	Pre- Deepawali Day (29.10.2021)			Deepawali Day (04.11.2021)		
	Lmin	Lmax	Leq dB(A)	Lmin	Lmax	Leq dB(A)
Time duration						
18:00 to 19:00 Hr						
19:00 to 20:00 Hr						
20:00 to 21:00 Hr						
21:00 to 22:00 Hr						
22:00 to 23:00 Hr						
23:00 to 24:00 Hr						

Interpretation of Noise Data / Results:

Report the compliance of the Noise level with standard limits for that area. The increase or decrease of the noise level on a particular day, state the cause of increase or decrease.

Ambient Air Quality monitoring data during Deepawali festival (28.10.2021 to 11.11.2021):

Data / Observations:

Name of the location :										
Date	Regulatory parameters							Proposed New Parameters		
	PM ₁₀ ($\mu\text{g}/\text{m}^3$)	PM _{2.5} ($\mu\text{g}/\text{m}^3$)	SO ₂ ($\mu\text{g}/\text{m}^3$)	NO ₂ ($\mu\text{g}/\text{m}^3$)	Metals in PM ₁₀			Metals /Elements in PM _{2.5}		
					Pb ($\mu\text{g}/\text{m}^3$)	Ni (ng/m^3)	As (ng/m^3)	Al ($\mu\text{g}/\text{m}^3$)	Ba ($\mu\text{g}/\text{m}^3$)	Fe ($\mu\text{g}/\text{m}^3$)
28.10.2021										
29.10.2021										
30.10.2021										
31.10.2021										
01.11.2021										
02.11.2021										
03.11.2021										
04.11.2021										
05.11.2021										
06.11.2021										
07.11.2021										
08.11.2021										
09.11.2021										
10.11.2021										
11.11.2021										

Interpretation of Ambient Air Quality Data/Results:

Report the compliance of the air pollutants concentration with standard limits for that area. If there is increase or decrease of pollutant concentration in that area, note the causes affecting air pollutants concentration.

Any other Information pertains to the monitoring activity

**SPEED POST**

No. LB-11/5/2021-AIR_LAB-HO-CPCB-HO

Dated 15.09.2021

To,

The Member Secretary,
Haryana State Pollution Control Board,
C – 11, Sector 6, Panchkula, Haryana.

Sub: Special Monitoring of Ambient Air and Noise levels during Deepawali Festival 2021 – Reg.

Sir,

Hon'ble Supreme Court of India, in writ petition (Civil) No.728 of 2015 directed that CPCB and State Pollution Control Boards / Pollution Control Committees (SPCBs/PCCs) of the States and Union Territories shall carry out short-term monitoring in their cities for 14 days (commencing from 7 days prior to Diwali and ending 7 days after Diwali) for different parameters. The copy of the judgement is available at the website link: www.sci.gov.in/supremecourt/2015/32461_2015/Judgement_23-oct-2018.pdf.

This year, the festival of Deepawali falls on 04th November, 2021 (Thursday). Therefore, it is requested to conduct the noise monitoring on Pre-Deepawali day i.e. 29th October, 2021 (Friday) & Deepawali day on 04th November, 2021 (Thursday) and ambient air quality monitoring for consecutive 15 days commencing from 28th October, 2021 to 11th November, 2021 (i.e. 7 days before and after Deepawali).

For analysis of parameters like PM₁₀, PM_{2.5}, SO₂, NO₂ and metals (Pb, Ni & As in PM₁₀) the CPCB guidelines volume-I may be adopted. For metal / elements analysis in PM_{2.5} (PTFE Filter), EDXRF is the best option, however, other suitable method (ICP-MS/ICP-AES) may also be adopted.

To maintain uniformity in ambient noise and air quality monitoring, the monitoring protocol and data sheets (Annexure-I, II and III) may kindly be adopted. The same uniformity may be followed in the final data reporting with respect to all locations in the form of Annexure-IV & V. The monitoring data may be sent by e-mail to krishnacpcb@yahoo.co.in and apathak.cpcb@nic.in by 19th November, 2021, positively in word / excel format for the report.

The AAQM report may be submitted to Hon'ble Supreme Court by the respective SPCBs & PCCs individually.

Encl.: As above

Yours faithfully,

(V.K. Shukia)
Addl. Director &
DH-Air Laboratory

Protocol for Ambient Level Noise Monitoring

1.0 Purpose:

This protocol presents the protocol for Ambient Noise monitoring to be carried out on routine basis or to address the public complaints. The objective is to monitor the noise level at a particular site or as described in the complaints. The data generated by the method shall also evaluate with prescribed noise level standards.

2.0 Introduction

The unit of noise is decibel, one-tenth of a bell and denotes as d(B), however the monitoring unit is considered as dB(A) Leq denotes the time weighted average 'A' of the level of sound in decibels on **scale A** and it has been found related to **human hearing**. Thus in, dB(A)Leq, denotes the frequency weighting in the measurement of noise and corresponds to frequency response characteristics of the human ear. The unit of frequency is hertz (Hz) and is defined as the number of compressions and rarefactions per unit time (sec.). Human hearing is sensitive to frequencies in the range of about 20-20,000 Hz (the audio frequency range).

Sound pressure is used as the fundamental measure of sound (amplitude) as it is measurable directly by any standard instruments. The weakest sound pressure disturbance that can be detected by an "average" person at 1,000Hz has been found to be $20 \mu\text{N/m}^2$ and the largest $10^7 \mu\text{N/m}^2$. Because of such a wide range, the use of a linear pressure scale has been found to be non-scientific. It has been found convenient to employ sound pressure level, a quality, which is proportional to the logarithm of sound pressure. By this, the sound pressure range of interest is compressed between 0 to 130 dB.

3.0 Site Selection Criteria:

Site of an area shall be selected such that it meets the land use pattern as prescribed in the standard e.g. Industrial, Commercial, Residential & Silence Zone.

(A) General:

1. The station should be located at the ambient level i.e. away from the direct source, away from any vibration and any obstruction.
2. Categorize the area with land use pattern.

(B) Specific:

Always use tripod stand at above the ground level of 1 to 1.5 m for areas. Hand held monitoring should be avoided.

(C) Case Specific Locations:

- DG Sets up to 800 kW at about 1 m distances from all sides. DG Sets more than 800 kW at about 1 m distance of acoustic enclosure. Concerned State PCBs / PCCs may regulate the norms with minimum reduction of 25 dB(A) to see the effectiveness of the enclosure.

- Petrol and Kerosene Gensets Sound power level is measured in anechoic room so as to have segregated noise level.
- Fire crackers 4 m from the bursting point, there shouldn't be reflecting surface around 15m radius.
- Vehicle 0.5m from the exhaust point.

(D) Positioning of the instrument:

- Microphone must be placed 1.2 -1.5m above the ground level.
- In dry conditions with a wind speed of less than 5 m/s.
- Isolate the instrument from strong vibration and shock.

4.0 Selection of Noise level meter:

Noise measurements will be made with a Type 1 integrating sound level meter with free-field microphone which meets the Accuracy of noise measurement as per IEC 804 (BS 6698) Grade I or ANSI Type I or equivalent IEC 61672-1(2002-05) Class-I.

5.0 Calibration:

Make sure that the instrument is properly calibrated. Measurements should be accepted as valid only if the calibration level from before and after the noise measurement agrees to within 1.0 dB. The sound level meter and calibrator will hold a current calibration certificate traceable to national standards.

Start the calibrator and put on 1 KHz frequency calibration on two values 94 dB and 114 dB. If instrument is shows more than ± 0.3 dB differences adjust the calibration. Calibration is done O.K. now instrument is ready for monitoring.

6.0 Monitoring time:

The monitoring should be carried out minimum 75% of the prescribed Day time (06.00 am to 22.00 pm) and Night time (22.00 pm to 06.00 am).The exercise has to be carried out for 6 to 8 hrs. in the said time frame of day & night. It is always preferable to have large number of data sets thus 1sec sampling frequency is recommended.

7.0 Monitoring Parameters:

L_{eq} , L_{10} , L_{90} , L_{50} , L_{max} , L_{min} , (with 1 sec sampling period at all locations).

8.0 Monitoring Protocol:

The following criteria will be observed when undertaking the noise monitoring:

- a) During ambient noise monitoring sound comes from more than one direction, it is important to choose a microphone and mounting which gives the best possible Omni directional characteristics;
- b) The noise measurement equipment will be supervised continuously during the monitoring period and notes will be made of the date, time and prevailing weather conditions;

- c) Immediately prior to and following each noise measurement session the accuracy of the noise level meter shall be checked using an acoustic calibrator generating a known sound pressure level at a known frequency.
- d) Noise measurements should not be made in fog and rain;
- e) A wind shield will be used at all times to prevent interference of reflecting noise;
- f) As far as is practicable, the pause facility on the noise measurement equipment will be used to exclude extraneous noise (e.g. low flying aircraft and road traffic passing in front of the microphone) so that the results recorded are representative of the site noise. If possible for extraneous noise/other source background noise can be eliminated from final reading by using the following formula:

$$L_{\text{pressure}} = 10 \cdot \log [10^{(L_p/10)} - 10^{(L_{p\text{Background}}/10)}]$$

9.0 Monitoring records:

- (i) The date, time, location and duration of the measurement;
- (ii) All predominant noise sources will be noted, which may include extraneous noise such as road traffic, aero-planes and other activity;
- (iii) Weather conditions will be recorded including wind speed and approximate direction, cloud cover, rain and ground frost;

10.0 Monitoring data submission:

The particulars of the measurements recorded by the noise level meter shall be furnished in the monitoring data sheet, as at **Annexure I**. A typical flow chart may be adopted for uniformity in the monitoring.

11.0 Monitoring Inferences:

The monitoring inferences should be drawn on the basis of final data sheet viz. compliance to the specified standard, violation of standard, average L_{eq} , noise intensity L_{50} , L_{90} etc. and suggest corrective action.

Manual Ambient Noise Monitoring Flow Chart

Type of Monitoring

Type of Location
Sensitive/Residential/Commercial/Industrial

Identify the Source for ambient Noise
Locations for monitoring, Calibration of Instrument, Monitoring Duration,
Monitoring data, Data sheet

Follow the procedure as given in protocol for Monitoring

Inferences / Conclusion (Day Time / Night Time)

Further monitoring

Identify the Source for ambient Noise & Suggest control measures

CENTRAL POLLUTION CONTROL BOARD, DELHI
AMBIENT NOISE OF DELHI
Data sheet for Ambient Noise Monitoring

Location:				Date:				
				Time : Day Time / Night Time				
Noise Level Meter								
Make		:						
Model		:						
Serial No.		:						
Calibration Result of Noise Level Meter								
Calibration			94 dB at 1000 Hz			114 dB at 1000 Hz		
Initial								
Final								
Sampling rate								
S. No.	Time duration	File No.	L equivalent dB(A)					
			Leq.	L ₁₀	L ₅₀	L ₉₀	L _{min}	L _{max}
1								
2								
3								
4								
5								
6								
Average L equivalent dB(A)								
Monitoring team & signature								
<p>Notes: (1) The method for calculation of average Leq: To convert average of dB(A), each value is to be divided by 10, followed by antilog and finally calculate arithmetic mean. The final value is converted in logarithm followed by multiplication with 10. (2) monitoring must be carried for 75% of the prescribed day time and night time for legal compliance, (3) L_{max} and L_{min} are to reported hourly basis and (4) L₅₀ & L₉₀ also recorded to understand the intensity of the noise for further course of action.</p>								

(Monitored by)

(Checked by)

Authorized Signatory

CENTRAL POLLUTION CONTROL BOARD, DELHI
AMBIENT AIR QUALITY OF DELHI
DATA SHEET FOR PM₁₀ & PM_{2.5}

Station:				
Date				
Parameter	PM ₁₀			PM _{2.5}
Shift	Ist Shift	IInd Shift	IIIrd Shift	24hour
Monitoring Period	06:00AM-02:00PM	02:00PM-10:00PM	10:00PM-06:AM	06:00AM-06:00AM
Filter Paper No.				
Hourly Flow Rate (m ³ /minute)				
Average Flow Rate (m ³ /minute)				
Total Operation Time (Minutes)				
Initial Weight of Filter Paper (gms.)				
Final Weight of Filter Paper (gms.)				
Dust Contents (gms.)				
Total Volume of Air Sampled (m ³)				
Concentration (µg/m ³)				
24 Hourly Average (µg/m ³):				
Remarks:				
Name & Signature of Official on duty:				

CENTRAL POLLUTION CONTROL BOARD, DELHI
AMBIENT AIR QUALITY OF DELHI
DATA SHEET FOR GASEOUS AIR POLLUTANTS

Annexure-III

Station:													Date:
Shift	Ist Shift				IInd Shift				IIIrd Shift				
Monitoring Period	06:00AM-10:00AM	10:00AM-02:00 PM	02:00PM-06:00PM	06:00PM-10:00PM	10:00PM-02:00AM	02:00AM-06:00AM							
Parameter	SO ₂	NO ₂	SO ₂	NO ₂	SO ₂	NO ₂	SO ₂	NO ₂	SO ₂	NO ₂	SO ₂	NO ₂	
Hourly Flow Rate (lpm)													
Average Flow Rate (lpm)													
Total Operation Time (Minutes)													
Initial Volume of Sample (ml)													
Final Volume of Sample (ml)													
Volume Taken For Analysis (ml)													
Total Volume of Air Sampled (lit.)													
Absorbance (Blank)													
Absorbance (Sample)													
Concentration (µg/m³)													
24 Hourly Average SO₂ (µg/m³):							24 Hourly Average NO₂ (µg/m³):						
Remarks:													
Name & Signature of Official on duty:													

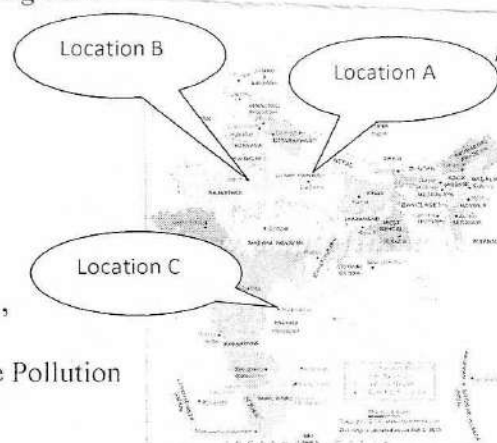
Format of Report: Deepawali Monitoring 2021

City:

- Latitude & Longitude
- Climate/Meteorology
- Population
- Major Land use

Monitoring Locations:

- Map showing all monitoring locations of the city
- Description of monitoring site: Area/ Zone: Industrial (I), Residential (R), Commercial (C) & Silence (S)
- Activities around the monitoring location/Sources of Noise Pollution



Data / Observations:

Ambient Noise Level during Deepawali festival, 2021:

Location: A Area/Zone : I/R/C/S	Pre- Deepawali Day (29.10.2021)			Deepawali Day (04.11.2021)		
	Lmin	Lmax	Leq dB(A)	Lmin	Lmax	Leq dB(A)
Time duration						
18:00 to 19:00 Hr						
19:00 to 20:00 Hr						
20:00 to 21:00 Hr						
21:00 to 22:00 Hr						
22:00 to 23:00 Hr						
23:00 to 24:00 Hr						

Location: B Area/Zone : I/R/C/S	Pre- Deepawali Day (29.10.2021)			Deepawali Day (04.11.2021)		
	Lmin	Lmax	Leq dB(A)	Lmin	Lmax	Leq dB(A)
Time duration						
18:00 to 19:00 Hr						
19:00 to 20:00 Hr						
20:00 to 21:00 Hr						
21:00 to 22:00 Hr						
22:00 to 23:00 Hr						
23:00 to 24:00 Hr						

Location: C Area/Zone : I/R/C/S	Pre- Deepawali Day (29.10.2021)			Deepawali Day (04.11.2021)		
	Lmin	Lmax	Leq dB(A)	Lmin	Lmax	Leq dB(A)
Time duration						
18:00 to 19:00 Hr						
19:00 to 20:00 Hr						
20:00 to 21:00 Hr						
21:00 to 22:00 Hr						
22:00 to 23:00 Hr						
23:00 to 24:00 Hr						

Interpretation of Noise Data / Results:

Report the compliance of the Noise level with standard limits for that area. The increase or decrease of the noise level on a particular day, state the cause of increase or decrease.

Ambient Air Quality monitoring data during Deepawali festival (28.10.2021 to 11.11.2021):

Data / Observations:

Name of the location :										
Date	Regulatory parameters							Proposed New Parameters		
	PM ₁₀ ($\mu\text{g}/\text{m}^3$)	PM _{2.5} ($\mu\text{g}/\text{m}^3$)	SO ₂ ($\mu\text{g}/\text{m}^3$)	NO ₂ ($\mu\text{g}/\text{m}^3$)	Metals in PM ₁₀			Metals /Elements in PM _{2.5}		
					Pb ($\mu\text{g}/\text{m}^3$)	Ni (ng/m^3)	As (ng/m^3)	Al ($\mu\text{g}/\text{m}^3$)	Ba ($\mu\text{g}/\text{m}^3$)	Fe ($\mu\text{g}/\text{m}^3$)
28.10.2021										
29.10.2021										
30.10.2021										
31.10.2021										
01.11.2021										
02.11.2021										
03.11.2021										
04.11.2021										
05.11.2021										
06.11.2021										
07.11.2021										
08.11.2021										
09.11.2021										
10.11.2021										
11.11.2021										

Interpretation of Ambient Air Quality Data/Results:

Report the compliance of the air pollutants concentration with standard limits for that area. If there is increase or decrease of pollutant concentration in that area, note the causes affecting air pollutants concentration.

Any other Information pertains to the monitoring activity