TREND ANANLYSIS OF AMBIENT NOISE QUALITY OF JODHPUR CITY (FROM APRIL-2023 TO MARCH- 2024)

REGIONAL LABORATORY,

RAJASTHAN STATE POLLUTION CONTROL BOARD,
JODHPUR

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1. Introduction

Jodhpur is situated in Western part of Rajasthan, between 26° and 27°31' north latitudes and between 72°55' and 73°52' east longitude. It is bounded on the north by Bikaner and Jaisalmer district, on the south by Pali and Barmer districts, on the east by Pali and Nagaur districts and on the west by Jaisalmer district. According to the Census of 2011, the district of Jodhpur has a population of 36,87,165 out of which 19,23,928 are males and 17,63,237 are females. It accounts for 5.38 percent of the State population. The Geographical area of the district is 22,850 sq. km which is 6.68 percent of the total state area. The district ranks 2nd in terms of population and 4th in terms of area and 29th in terms of population density among all districts of the state. The sex ratio of Jodhpur district (916) is lower than the State sex ratio (928) and the literacy rate in Jodhpur district is 65.9 percent which is lower than the State Average (66.1 percent) and it ranks 15th among the other districts of the state. Gender Gap of the literacy rate is 27.2 percent in the district. The western & north-western parts of district are characterized by sand dunes. Sand dunes of transverse, longitudinal and parabolic variety are present and attain a height of 10 to 40 m. There is only one important river in the district, viz., Luni, which enter the district near Bilara and flows for a distance of over 75 kms. before entering in Barmer district. Jodhpur district lies in the arid western plain Agro-Climatic Zone, according to the classification by Department of Agriculture, Government of Rajasthan. Soils in this zone are desert soils and sand dunes aeolian soil, coarse sand in texture some places calcareous. Commonly grown crops in this zone in kharif season are Pearl millet, Moth bran and Sesame and in Rabi season are wheat, mustard and cumin. The Finance and Appropriations Bill was presented by Rajasthan Government, March 17, 2023. Where a number of announcements were made. The recent announcement of 19 districts in Rajasthan is the largest announcement. As a result, Rajasthan will now have 50 districts. Jodhpur is also divided into two parts. Jodhpur East and Jodhpur West have been declared as two districts. Phalodi also be created as a new district in Jodhpur.

Noise is also considered to be a pollutant and it has significant harmful effects not only on human beings but also on animals, birds and non-living things. Problems due to noise increasing day by day especially in the urban and industrial areas. Highways, airports, industries and centres where construction activities are carried on, are also considered high noise level areas. Noise pollution is a major problem in urban environments. Noise pollution is growing rapidly in urban areas due to sustained expansion in infrastructure development like industries, highways, rail networks and traffic, indiscriminate use of vehicular horns and

extensive use of loud speakers and disc jockey (DJ) sounds in Indian social and religious ceremonies pose various health hazards to the human being which are major sources of noise in urban areas. Noise pollution causes various degrees of psychological and physiological effects on human health. It directly or indirectly influences our behavior, cognition, mental performance, normal sleep duration and studies of students. Not only humans but also wildlife is affected by noise pollution causing changes in the path of migratory birds, their feeding habits, breeding duration and season, to name a few.

Silence zone is referred as areas up to 100 meters around such premises as hospitals, educational institutions and courts. Use of vehicular horns, loudspeakers and bursting of crackers are banned in these zones. Noise prevention and control is important as noise adversely affects us in several ways. The environment with lesser noise may uplift the working efficiency of a person.

Traffic is one of the major contributors to the noise pollution in the city and chiefly affects the health of the residents of Jodhpur. Due to alarming increase in noise pollution, its standards for permissible level for different areas have been given by the Central Pollution Control Board **(Table 1).** These standards in has been laid down under the **Environment (Protection) Act, 1986.**

Table 1: Noise standards as given by Central Pollution Control Board, India (CPCB, 2000)

Area code	Category of area/Zone	Limits in dB (A) Leq	
		Day time	Night Time
A.	**Industrial Area**	**75**	**70**
B.	**Commercial Area**	**65**	**55**
C.	**Residential Area**	**55**	**45**
D.	**Silence Zone**	**50**	**40**

1. Day time shall mean from 6.00 a.m. to 10.00 p.m.

2. Night time shall mean from10.00 p.m. to 6.00 a.m.

3. **Silence zone** is an area comprising not less than 100 metres around hospitals, educational institutions, courts, religious places or any other area which is declared as such by the competent authority.

* dB(A) Leq denotes the time weighted average of the level of sound in decibels on scale A which is relatable to human hearing.

A "decibel" is a unit in which noise is measured.

"A", in dB (A) Leq, denotes the frequency weighting in the measurement of noise and corresponds to frequency response characteristics of the human ear.

Leq: It is an energy mean of the noise level over a specified period.

THE NOISE POLLUTION (REGULATION AND CONTROL) RULES, 2000

The Principal Rules were published in the Gazette of India, vide S.O. 123(E), dated 14.2.2000 and subsequently amended vide S.O. 1046(E), dated 22.11.2000, S.O. 1088(E), dated 11.10.2002, S.O. 1569 (E), dated 19.09.2006 and S.O. 50 (E) dated 11.01.2010 under the Environment (Protection) Act, 1986.) Whereas the increasing ambient noise levels in public places from various sources, inter-alia, industrial activity, construction activity, fire crackers, sound producing instruments, generator sets, loud speakers, public address systems, music systems, vehicular horns and other mechanical devices have deleterious effects on human health and the psychological well-being of the people; it is considered necessary to regulate and control noise producing and generating sources with the objective of maintaining the ambient air quality standards in respect of noise; Whereas a draft of Noise Pollution (Control and Regulation) Rules, 1999 was published under the notification of the Government of India in the Ministry of Environment and Forests vide number S.O. 528 (E), dated the 28th June, 1999 inviting objections and suggestions from all the persons likely to be affected thereby, before the expiry of the period of sixty days from the date on which the copies of the Gazette containing the said notification are made available to the public; And whereas copies of the said Gazette were made available to the public on the 1st day of July, 1999; And whereas the objections and suggestions received from the public in respect of the said draft rules have been duly considered by the Central Government; Now, therefore, in exercise of the powers conferred by clause (ii) of subsection (2) of section 3, sub-section (1) and clause (b) of sub-section (2) of section 6 and section 25 of the Environment (Protection) Act, 1986 (29 of 1986) read with rule 5 of the Environment (Protection) Rules, 1986, the Central Government hereby makes the following rules for the regulation and control of noise producing and generating sources.

In compliance of the direction of **Hon'ble Supreme Court** in **civil writ petition No. 72/1998** and direction of Central Pollution Control Board, Delhi, **vide letter no. LB-11/5/2021-**

AIR_LAB-HO dated 17.10.2023. The State Board has conduct Noise Monitoring during Deepawali Festival-2023, **Ref: HO Letter No. F.11 (589) RPCB/Lab/Vol-III/1211-1220,** dated **23.10.2023** on at Head Quarter of Deepawali of Twenty five Regional Offices at Alwar, Balotra (Barmer), Banswara, Bharatpur, Bhilwara, Bhiwadi, Bikaner, Bundi, Chittorgarh, Hanumangarh, Jodhpur, Jaisalmer, Jhalawar, Jhunjhunu, Kishangarh (Ajmer), Nagaur, Kota, Pali, Rajsamand, Sikar, Sirohi, Swai Madhopur, Udaipur and Jaipur city on 06.11.2023 (Pre-Deepawali) and on 12.11.2023 (On Deepawali) at location in Commercial/Residential/Industrial/Silence Zones as per enclosed CPCB Protocol for Ambient Level Noise Monitoring for a duration of 6 hours at each representative location from 18:00 Hrs. to 24:00 Hrs. with 1 sec sampling period. The timing of measurement at different location be synchronized and it must be kept them during monitoring in the stipulated period.

2. Monitoring Site

The noise levels Leq dB (A) were monitored at four sites of Jodhpur, namely **Regional Office** –RSPCB (Near Office Building), **Sojati Gate** (Near Sojati Gate Police Substation), **MDM Hospital** (Near Gastro Neuro Super Speciality wing), **ZBJS Colony** Conservation Office grouped as Industrial, commercial, Silence and Residential area respectively.

Table: 2 Location of Noise Monitoring site at Jodhpur City

S.N	Name of Monitoring Location in Jodhpur City	Latitude	Longitude
1	**Regional Office** – RSPCB, Near Office Building (Industrial Area)	26.22951	73.01333
2	**Sojati Gate** – Near Sojati Gate Police Substation, (Commercial Area)	26.28856	73.02374
3	**MDM Hospital** – Near Gastro Neuro Super Speciality wing (Silence Zone)	26.26425	73.00927
4	**ZBJS Colony** Conservation Office (Residential Area)	26.30638	73.06280

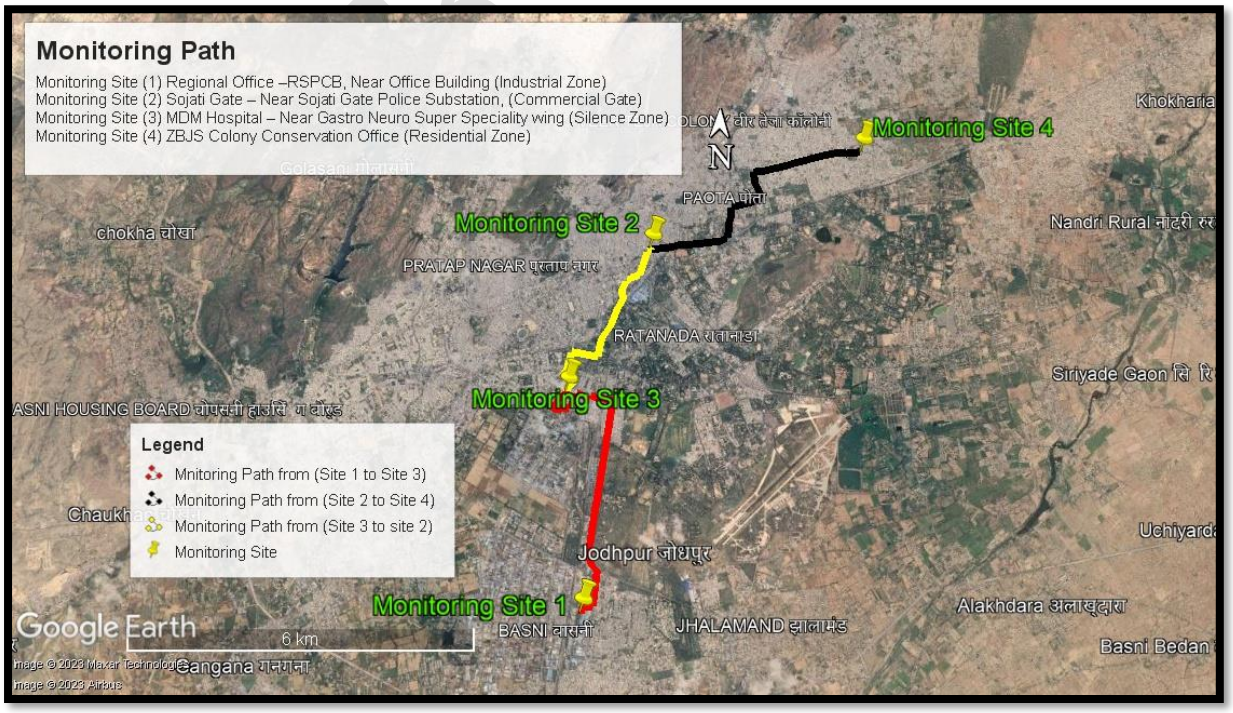


Figure. 1 Monitoring Site and their path in Google Earth

Monitoring Site: 1 Industrial Area (Regional Office–RSPCB, Near Office Building, Jodhpur City) site is the area which is part of industrial area of Jodhpur hence noise arising from machineries, heavy traffic, generator etc. are the main contributors to noise pollution.

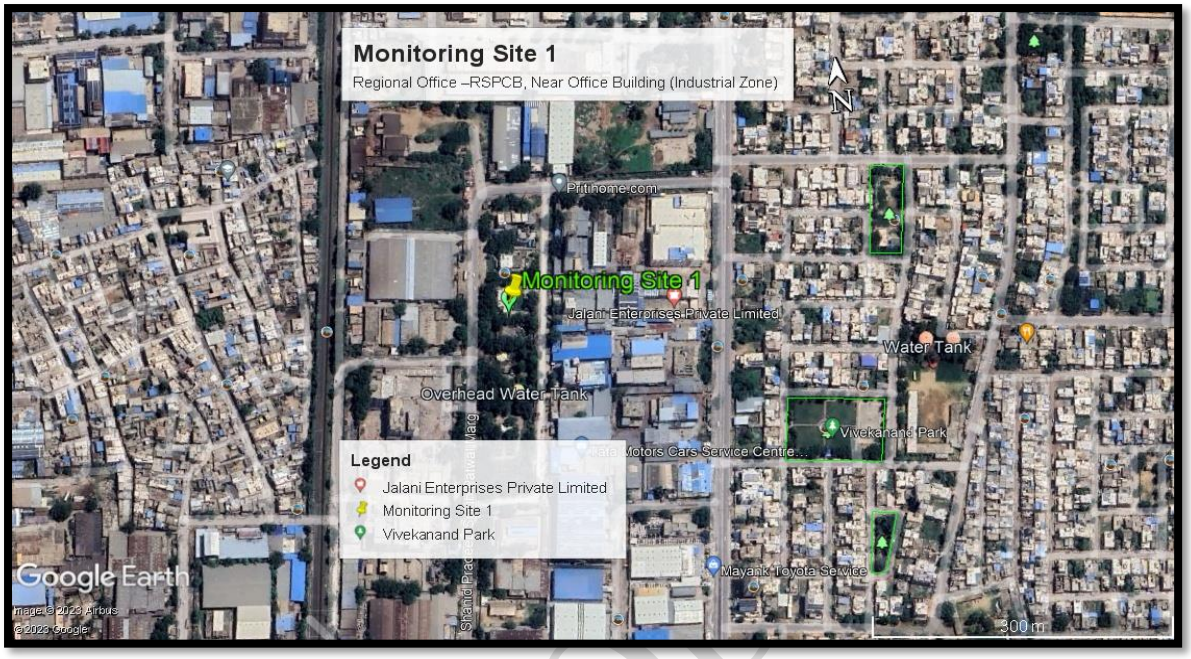


Figure. 2 Location map of Monitoring site 1 (Industrial Area – RSPCB Office), Jodhpur

Monitoring Site 2: Commercial Area (Sojati Gate – Near Sojati Gate Police Substation, Jodhpur City) site is an area with commercial activities – vendors, vehicular traffic, loud music sound etc. contribute to noise pollution.

Figure. 3 Location map of Monitoring site 2 (Commercial Area – Sojati Gate), Jodhpur

Monitoring Site: 3 Silence Zone (MDM Hospital – Near Gastro Neuro Super Speciality wing) site is the area which is part of silence area have lot of activities which create unnecessary sound which is quite disturbing to the persons admitted and recovering in this health centre.

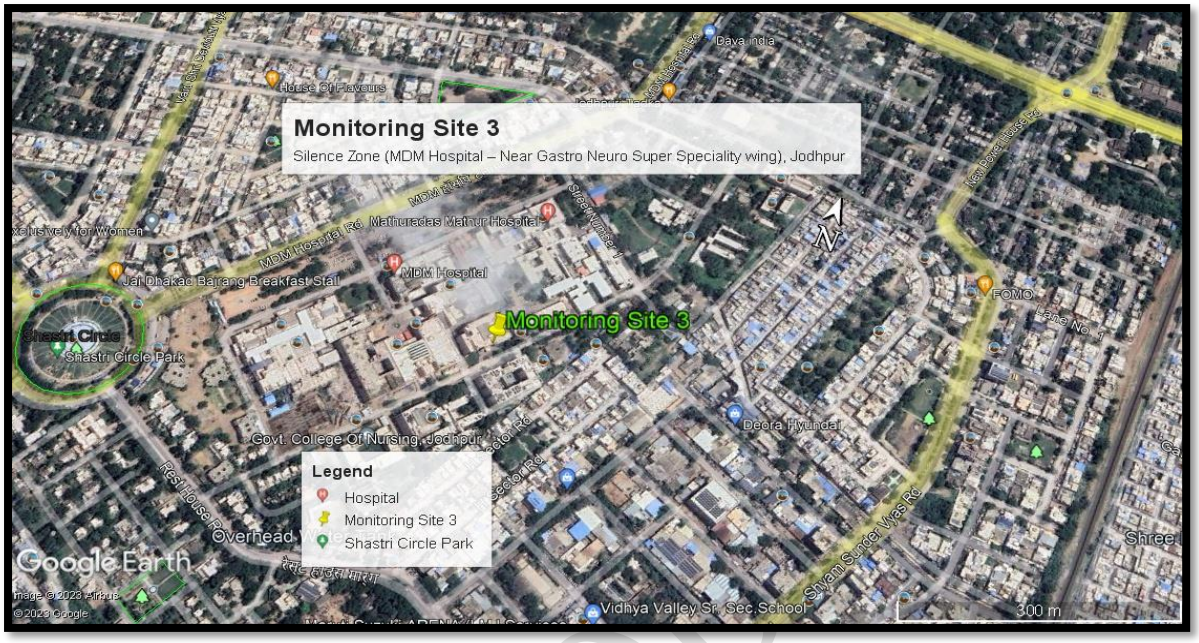


Figure. 4 Location map of Monitoring site 3 (Silence Zone – MDM Hospital), Jodhpur

Monitoring Site 4: Residential Area (ZBJS Colony Conservation Office, Jodhpur City) site is a residential area with number of houses in the locality, vehicular traffic, construction activities and other activities create the noise pollution in this area.

Figure.5 Location map of Monitoring Site 4 (Residential Area – ZBJS Colony), Jodhpur

3. Zone wise comparison of Noise Level Value (From April, 2023 to March, 2024)

Monitoring Results:

The Comparative table of noise level monitoring conducted in Jodhpur City.

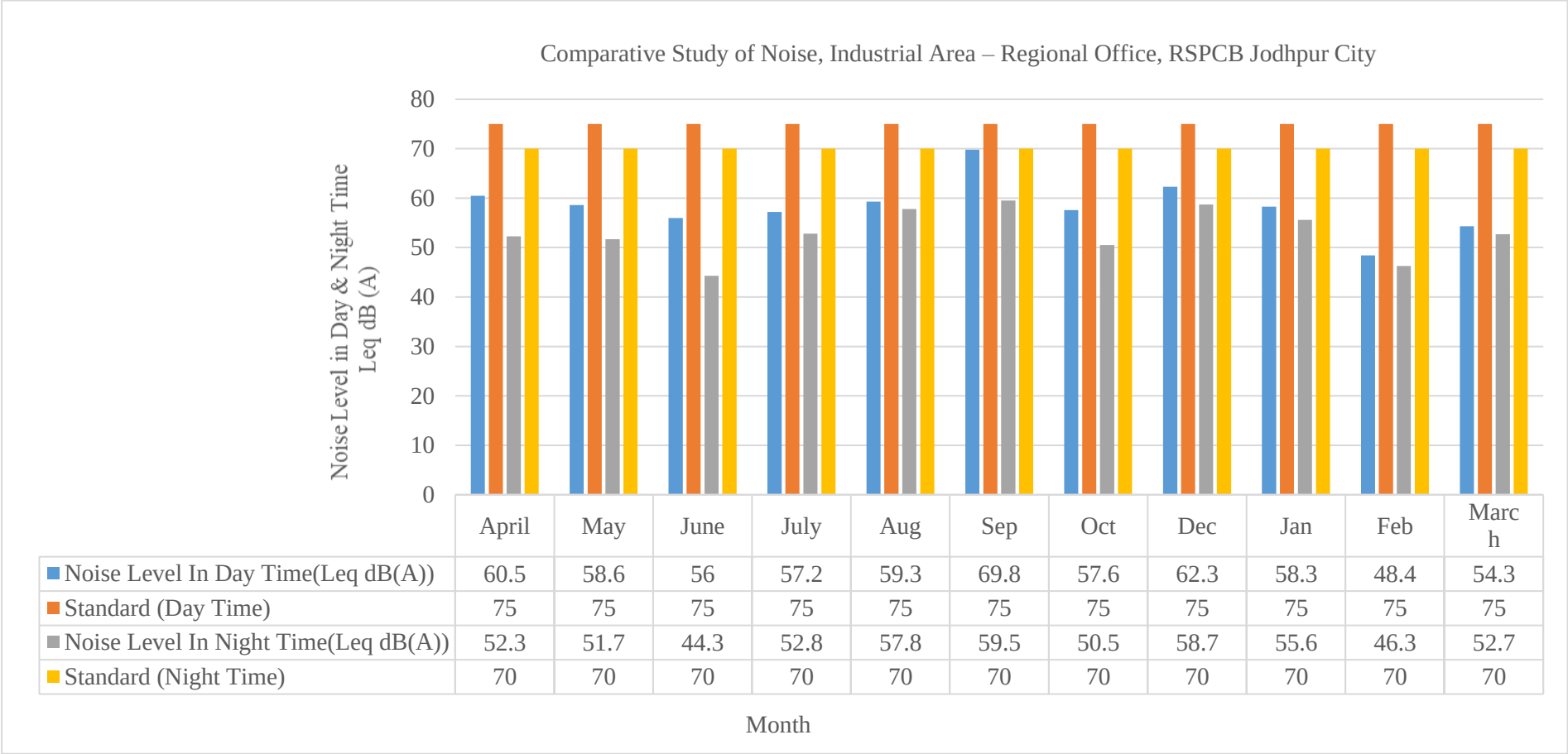
Table 3: Observed Noise Average (dB) at different sites during study period (April 2023 to March 2024)

Monitoring Period April 2023 to March 2024	Regional Office (Industrial Area)		Sojati Gate (Commercial Area)		ZBJS Colony (Residential Area)		MDM Hospital (Silence Zone)	
	Day Time	Night Time	Day Time	Night Time	Day Time	Night Time	Day Time	Night Time
April 2023	60.5	52.3	79.0	78.4	66.4	61.2	71.4	68.8
May 2023	58.6	51.7	72.9	68.6	70.3	66.8	70.7	70.4
June 2023	56	44.3	73.8	71.8	69.3	62.2	72.6	76.0
July 2023	57.2	52.8	76.5	67.1	86.6	71.0	73.1	58.1
Aug 2023	59.3	57.8	79.5	72.6	65.7	63.1	68.7	60.0
Sept 2023	69.8	59.5	77.1	69.8	65.1	60.1	68.3	65.0
Oct 2023	57.6	50.5	79.2	74.3	72.3	70.5	74.8	65.3
Nov 2023	-	-	-	-	-	-	-	-
Dec 2023	62.3	58.7	80.2	77.8	63.1	60.0	68.4	61.8
Jan 2024	58.3	55.6	74.4	72.8	69.5	59.5	63.8	61.1
Feb 2024	48.4	46.3	72.1	69.8	45.3	42.5	55.4	46.8
March 2024	54.3	52.7	68.2	62.7	58.3	54.2	49.4	44.6
Standard	**75**	**70**	**65**	**55**	**55**	**45**	**50**	**40**

- **Note: Noise Level in Leq DB (A) exceeded the prescribed standards are highlighted in yellow.**
- **These noise monitoring conducted in a particular day and night for every month.**
- **Pre-Deepawali and During Deepawali Special Monitoring was conducted in the month of November.**

1. <u>Industrial Area – Regional Office, RSPCB Jodhpur:</u>

The comparison between day and night noise levels of Residential Area in Jodhpur City from April, 2023 to March, 2024 is represented in Figure – 6.



	April	May	June	July	Aug	Sep	Oct	Dec	Jan	Feb	March
Noise Level In Day Time(Leq dB(A))	60.5	58.6	56	57.2	59.3	69.8	57.6	62.3	58.3	48.4	54.3
Standard (Day Time)	75	75	75	75	75	75	75	75	75	75	75
Noise Level In Night Time(Leq dB(A))	52.3	51.7	44.3	52.8	57.8	59.5	50.5	58.7	55.6	46.3	52.7
Standard (Night Time)	70	70	70	70	70	70	70	70	70	70	70

Figure.6 Noise Level during day & night time of Industrial Area from April, 2023 to March, 2024 of Jodhpur City [Standard as per the Noise Pollution (Regulation and control), Rules, 2000]

2. <u>Commercial Area (Sojati Gate – Near Sojati Gate Police Substation), Jodhpur City:</u>

The comparison between day and night noise levels of Commercial Area in Jodhpur City from April, 2023 to March, 2024 is represented in Figure – 7.

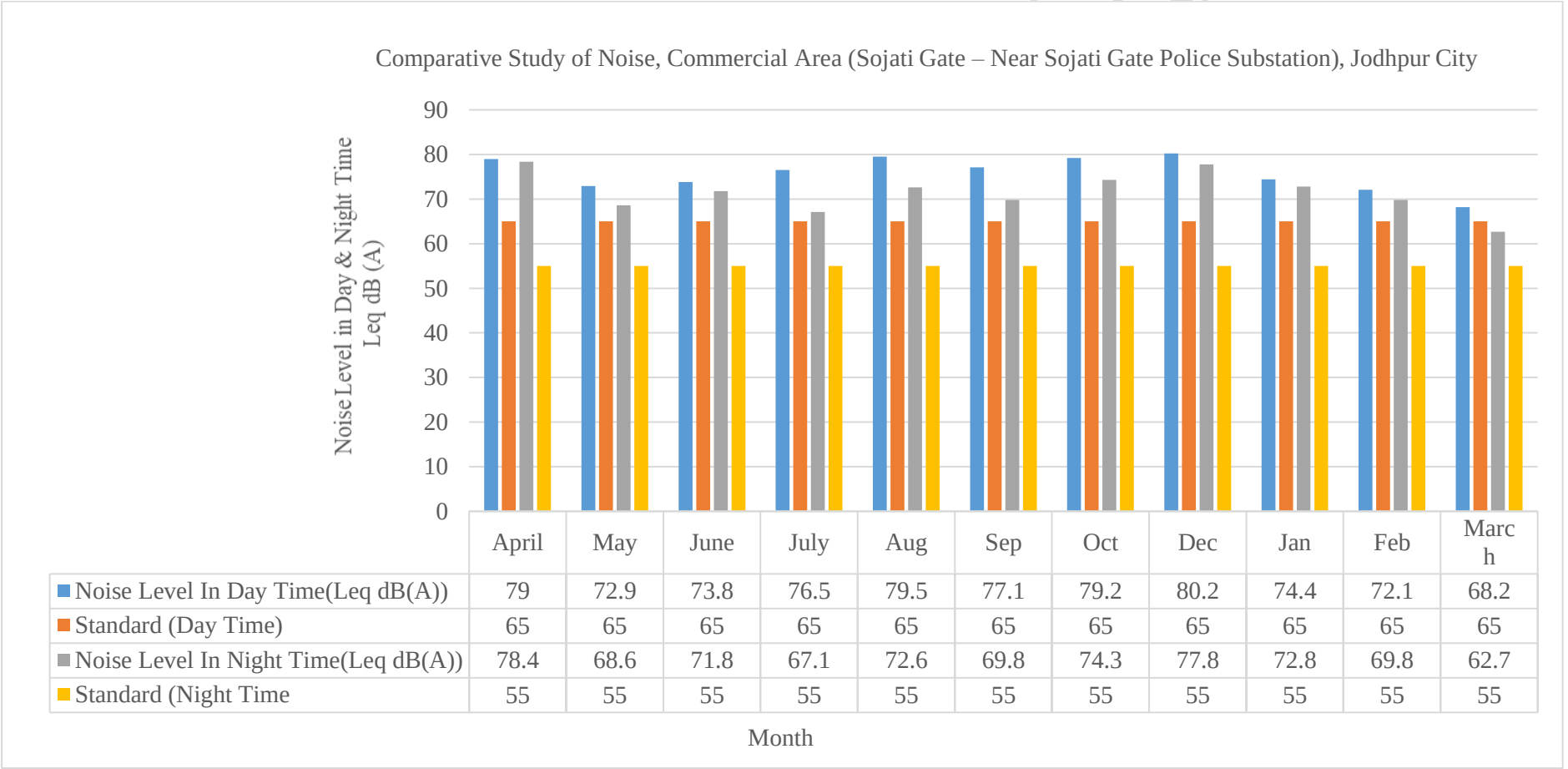
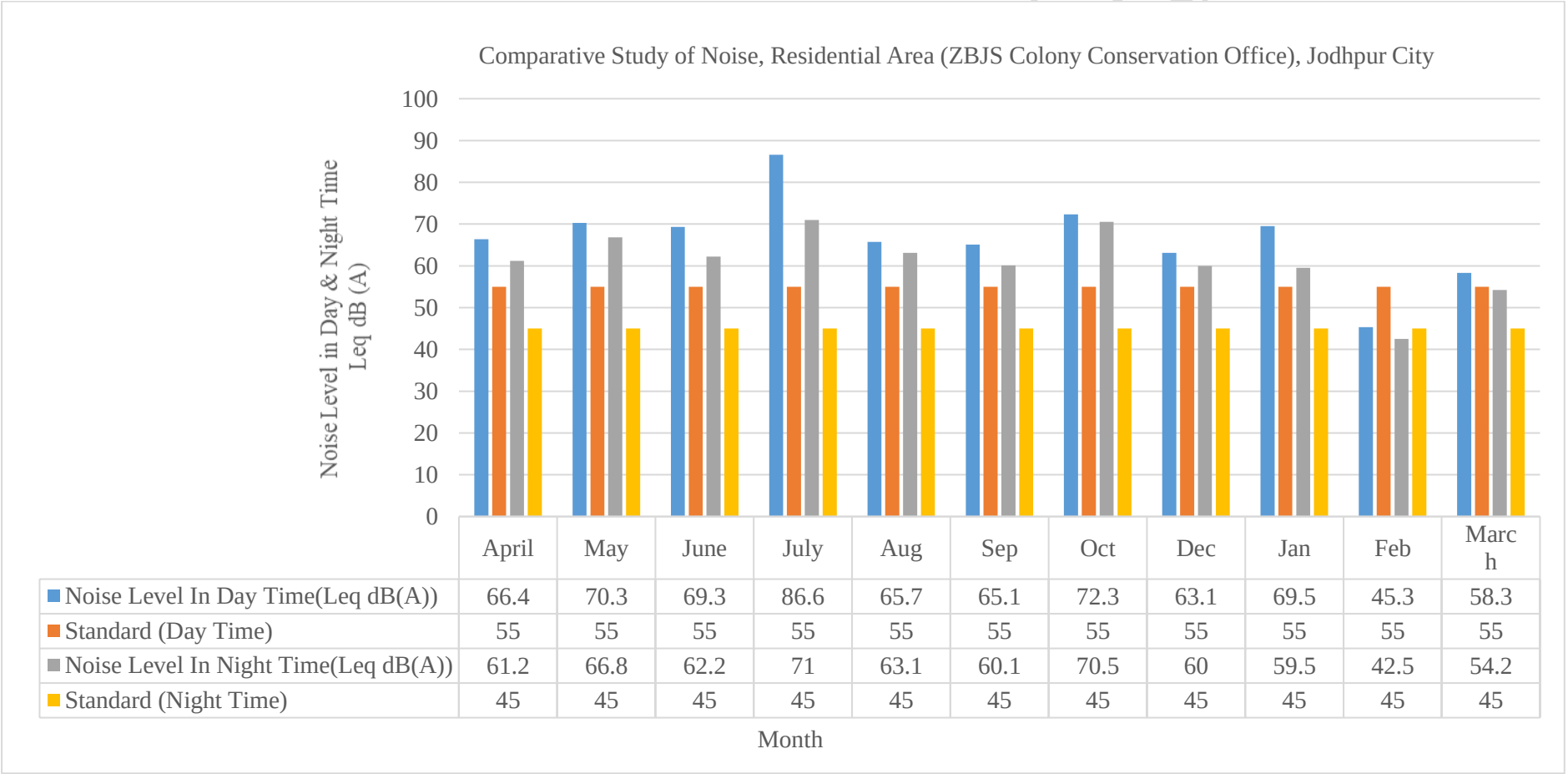


Figure.7 Noise Level during day & night time of Commercial Area from April, 2023 to March, 2024 of Jodhpur City [Standard as per the Noise Pollution (Regulation and control), Rules, 2000]

3. Residential Area (ZBJS Colony Conservation Office), Jodhpur City

The comparison between day and night noise levels of Residential Area in Jodhpur City from April, 2023 to March, 2024 is represented in Figure – 8.

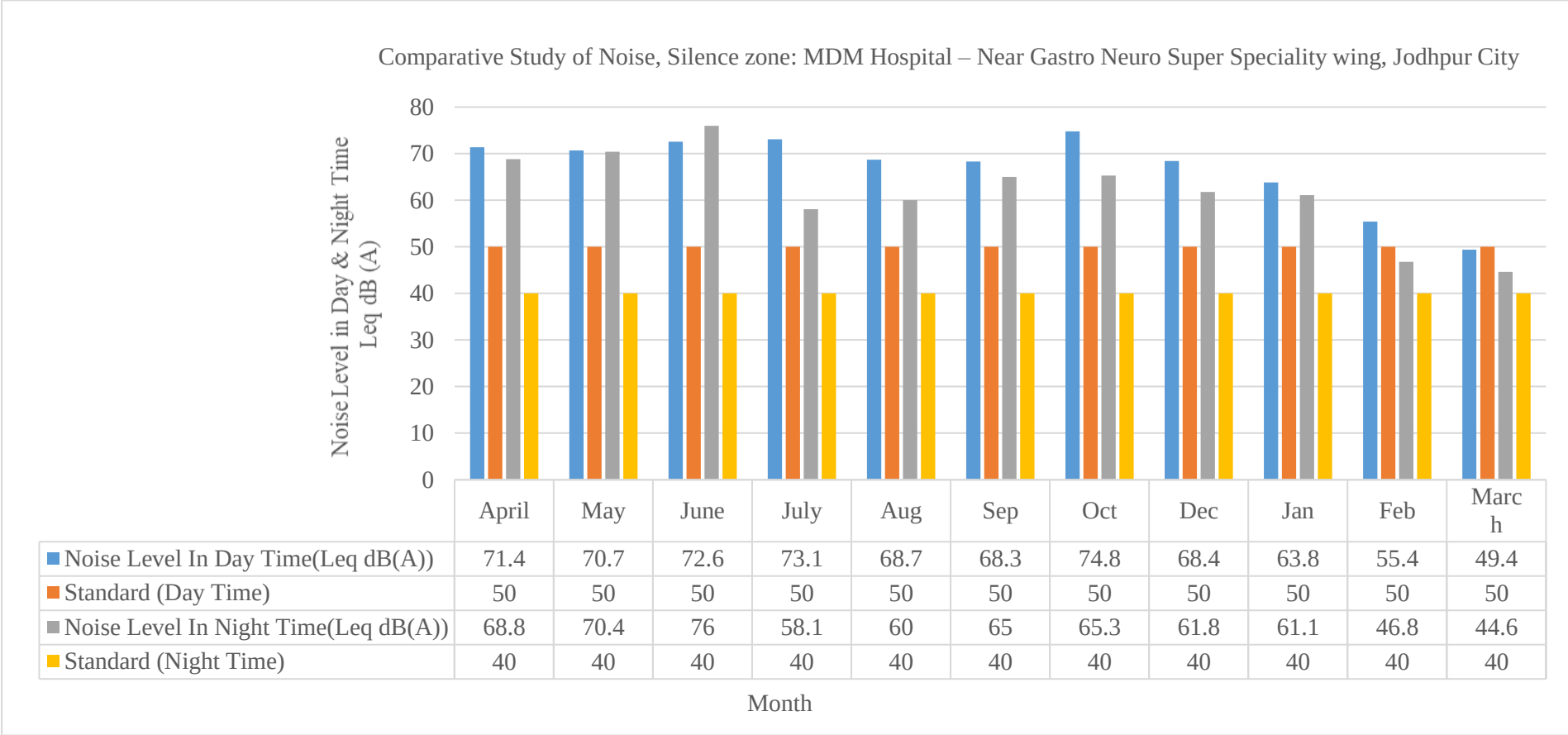


	April	May	June	July	Aug	Sep	Oct	Dec	Jan	Feb	March
Noise Level In Day Time(Leq dB(A))	66.4	70.3	69.3	86.6	65.7	65.1	72.3	63.1	69.5	45.3	58.3
Standard (Day Time)	55	55	55	55	55	55	55	55	55	55	55
Noise Level In Night Time(Leq dB(A))	61.2	66.8	62.2	71	63.1	60.1	70.5	60	59.5	42.5	54.2
Standard (Night Time)	45	45	45	45	45	45	45	45	45	45	45

Figure.8 Noise Level during day & night time of Residential Area from April, 2023 to March, 2024 of Jodhpur City [Standard as per the Noise Pollution (Regulation and control), Rules, 2000]

4. Silence zone: MDM Hospital – Near Gastro Neuro Super Speciality wing.

The comparison between day and night noise levels of Silence zone (MDM Hospital – Near Gastro Neuro Super Speciality wing) in Jodhpur City from April, 2023 to March, 2024 is represented in Figure – 9.



	April	May	June	July	Aug	Sep	Oct	Dec	Jan	Feb	March
Noise Level In Day Time(Leq dB(A))	71.4	70.7	72.6	73.1	68.7	68.3	74.8	68.4	63.8	55.4	49.4
Standard (Day Time)	50	50	50	50	50	50	50	50	50	50	50
Noise Level In Night Time(Leq dB(A))	68.8	70.4	76	58.1	60	65	65.3	61.8	61.1	46.8	44.6
Standard (Night Time)	40	40	40	40	40	40	40	40	40	40	40

Figure.9: Noise Level during day & night time of Silence zone from April, 2023 to March, 2024 of Jodhpur City [Standard as per the Noise Pollution (Regulation and control), Rules, 2000]

4. Conclusion

1. Industrial Area (Regional Office, RSPCB Basni, Jodhpur):

In **Industrial Area** (Regional Office, RSPCB Basni, Jodhpur) in day time, the noise level value was found **maximum in September, 2023 i.e., 69.8 Leq dB (A) & minimum in February, 2024 i.e., 48.4 Leq dB (A)** in comparison to prescribed limit of 75.0 Leq DB (A) [Standard as per the Noise Pollution (Regulation and Control) Rules, 2000].

In **Night time** the noise level value was found maximum in **September, 2023 i.e., 59.5 Leq dB (A) & minimum in June, 2023 i.e., 44.3 Leq dB (A)** in comparison to prescribed limit of 70.0 Leq dB (A) [Standard as per the Noise Pollution (Regulation and Control) Rules, 2000].

In day time & night time, the yearly **average values** for year **(April, 2023 to March, 2024)** were observed as **58.39 Leq dB (A) & 52.92 Leq dB (A)** against standard of **75.0 Leq dB (A) & 70.0 Leq dB (A).**

In all the one year **(April, 2023 to March, 2024),** the noise level value was found **within the prescribed limit** of **75.0 Leq dB (A) in day time and 70.0 Leq dB (A)** in night time.

2. Commercial Area (Sojati Gate – Near Sojati Gate Police Substation), Jodhpur City)

In **Commercial Area** (Sojati Gate, Near Sojati Gate Police Substation, Jodhpur City) in day time, the noise level value was found **maximum in December, 2023 i.e., 80.2 Leq dB (A) & minimum in March, 2024 i.e., 68.2 Leq dB (A)** in comparison to prescribed limit of 65.0 Leq DB (A) [Standard as per the Noise Pollution (Regulation and Control) Rules, 2000].

In Night time the noise level value was found **maximum in April, 2023 i.e., 78.4 Leq dB (A) & minimum in March, 2024 i.e., 62.7 Leq dB (A)** in comparison to prescribed limit of **55.0 Leq dB (A)** [Standard as per the Noise Pollution (Regulation and Control) Rules, 2000].

In day time & night time, the yearly **average values** for year **(April, 2023 to March, 2024)** were observed as **75.71 Leq dB (A) & 71.42 Leq dB (A)** against standard of **75.0 Leq dB (A) & 70.0 Leq dB (A).**

In all the year **(April 2023 to March 2024),** the noise level in Leq dB (A) **exceeded** the prescribed standard of **65.0 Leq dB (A)** in day time and **55.0 Leq dB (A)** in night time.

3. <u>Residential Area (ZBJS Colony Conservation Office), Jodhpur City</u>

In **Residential Area** (ZBJS Colony Conservation Office), Jodhpur City in day time, the noise level value was found **maximum in July, 2023 i.e., 86.6 Leq dB (A) & minimum in February, 2024 i.e., 45.3 Leq dB (A)** in comparison to prescribed limit of **55.0 Leq dB (A)** [Standard as per the Noise Pollution (Regulation and Control) Rules, 2000].

In **Night time** the noise level value was found **maximum in July, 2023 i.e., 71.00 Leq dB (A) & minimum in February, 2024 i.e., 42.5 Leq dB (A)** in comparison to prescribed limit of **45.0 Leq dB (A)** [Standard as per the Noise Pollution (Regulation and Control) Rules, 2000].

In day time & night time, the yearly **average values** for year **(April, 2023 to March, 2024)** were observed as **66.53 Leq dB (A) & 61.00 Leq dB (A)** against standard of **55.0 Leq dB (A) & 45.0 Leq dB (A).**

In all the year **(April 2023 to March 2024),** the noise level in Leq DB (A) **exceeded** the prescribed standard of **55.0 Leq dB (A)** in day time and **45.0 Leq dB (A)** in night time.

4. <u>Silence zone (MDM Hospital – Near Gastro Speciality wing Neuro), Jodhpur City</u>

In **Silence zone** (MDM Hospital – Near Gastro Neuro Super Speciality wing), Jodhpur City in day time, the noise level value was found **maximum in October, 2023 i.e., 74.8 Leq DB (A) & minimum in March, 2024 i.e., 49.4 Leq DB (A)** in comparison to prescribed limit of **50.0 Leq DB (A)** [Standard as per the Noise Pollution (Regulation and Control) Rules, 2000].

In **Night time** the noise level value was found **maximum in June, 2023 i.e., 76.0 Leq dB (A) & minimum in March, 2024 i.e., 44.6 Leq dB (A)** in comparison to prescribed limit of **40.0 Leq dB (A)** [Standard as per the Noise Pollution (Regulation and Control) Rules, 2000].

In day time & night time, the yearly **average values** for year **(April, 2023 to March, 2024)** were observed as **66.96 Leq dB (A) & 61.62 Leq dB (A)** against standard of **50.0 Leq dB (A) & 40.0 Leq dB (A).**

In all the year **(April 2023 to March 2024),** the noise level in Leq DB (A) **exceeded** the prescribed standard of **50.0 Leq dB (A)** in day time and **40.0 Leq dB (A)** in night time.

5. Special Monitoring on Deepawali (In The Month of November, 2023)

As per the Direction of **Hon'ble Supreme Court** in civil writ petition No. **72/1998** and direction of **Central Pollution Control Board, Delhi, vide letter no. LB-11/5/2021-AIR_LAB-HO** dated **17.10.2023.**

Special Monitoring of Ambient Noise during Deepawali Festival-2023, HO Letter No. F.11 (589) RPCB/Lab/Vol-III/1211-1220, dated **23.10.2023. The State Board has conduct Noise Monitoring on at Head Quarter of Deepawali of Twenty five Regional Offices.**

Ambient Level Noise Monitoring for a duration of **6 hours** at each representative location (Commercial and Residential zone) from **18:00 Hrs. to 24:00 Hrs**. with 1 sec sampling period.

Table 4: Special Monitoring of Noise during Deepawali Festival – 2023 & Comparison between Pre-Diwali & during Diwali.

Monitoring Period April 2023 to March 2024	Shastri Circle (Commercial Area)		Sojati Gate (Commercial Area)		Maha Mandir (Residential Area)	
	Day Time	Night Time	Day Time	Night Time	Day Time	Night Time
Nov. 2023 (Pre-Diwali)	-	62.75	-	70.47	-	63.85
Nov. 2023 (During –Diwali)	-	72.05	-	76.83	-	79.25
Standard	65	55	65	55	55	45

- **Note: Noise Level in Leq dB (A) exceeded the prescribed standards are highlighted in yellow.**
- **Special Monitoring of noise was conducted at Commercial and Residential zone of Jodhpur City, during Pre-deepawali and during deepawali.**
- **Deepawali Special Monitoring was conducted from 18:00 Hrs. to 24:00 Hrs. at each representative location (Commercial and Residential zone) for a duration of 6 hours.**

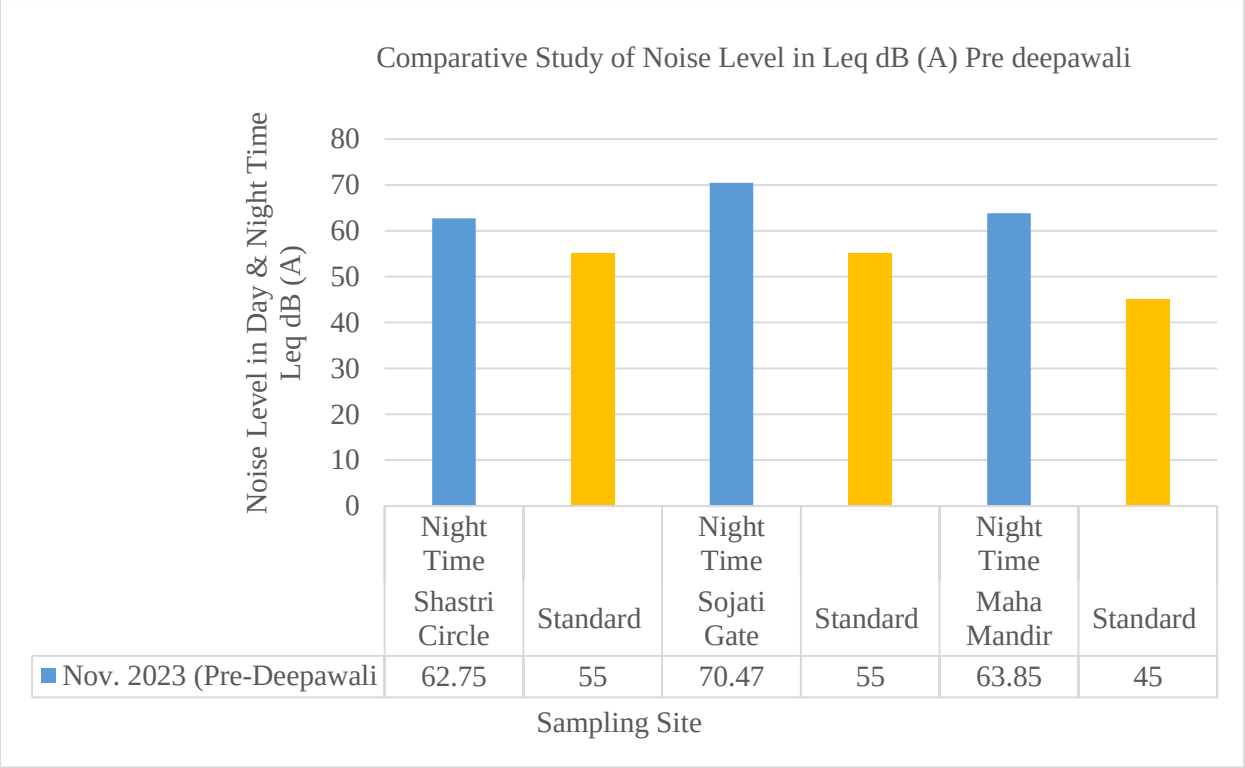


Figure.10 Noise Monitoring during night time in Commercial and Residential Area in the month of November-2023 (Pre-Diwali) of Jodhpur City.

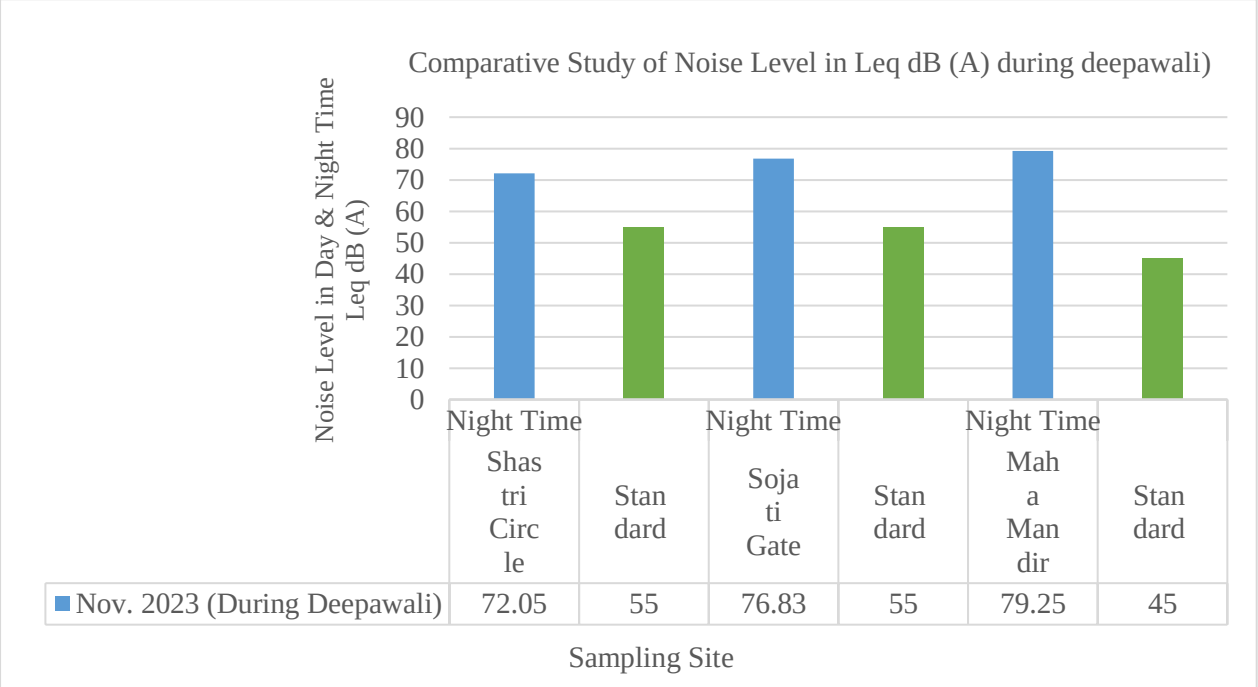


Figure.11 Noise Monitoring during night time of Commercial and Residential Area in the month of November-2023 (During Diwali) of Jodhpur City.

Result & Discussion: (Pre Diwali & During-Diwali Monitoring, Nov. 2023):

1. **Commercial Area: (Sojati Gate, Near Sojati Gate Police Substation, Jodhpur City)**

In the month of November **(Pre- Diwali)** in **Commercial Area** (Sojati Gate, Near Sojati Gate Police Substation, Jodhpur City) the noise level value was found **maximum in Night time i.e., 70.47 Leq dB (A)** the noise level in Leq dB (A) **exceeded** the prescribed standard of **55.0 Leq dB (A)** in night time.

In the month of November **(During Diwali)** in **Commercial Area** (Sojati Gate, Near Sojati Gate Police Substation, Jodhpur City) the noise level value was found **maximum in Night time i.e., 76.83 Leq dB (A)** the noise level in Leq dB (A) **exceeded** the prescribed standard of **55.0 Leq dB (A)** in night time.

2. Commercial Area (Shastri Circle, Jodhpur City)

In the month of November (Pre- Diwali) in **Commercial Area** (Sojati Gate, Near Sojati Gate Police Substation, Jodhpur City) the noise level value was found **maximum in Night time i.e., 62.75 Leq dB (A)** the noise level in Leq dB (A) **exceeded** the prescribed standard of **55.0 Leq dB (A)** in night time.

In the month of November (During Diwali) in **Commercial Area** (Sojati Gate, Near Sojati Gate Police Substation, Jodhpur City) the noise level value was found **maximum in Night time i.e., 72.05 Leq dB (A)** the noise level in Leq dB (A) **exceeded** the prescribed standard of **55.0 Leq dB (A)** in night time.

3. Residential Area: (ZBJS Colony Conservation Office, Jodhpur City)

In the month of November **(Pre- Diwali)** in **Residential Area** (**Maha Mandir, Jodhpur City)** the noise level value was found **maximum in Night time i.e., 63.85 Leq dB (A)** the noise level in Leq dB (A) **exceeded** the prescribed standard of **45.0 Leq dB (A)** in night time.

In the month of November **(During- Diwali**) in **Residential Area** (**Maha Mandir, Jodhpur City)** the noise level value was found **maximum in Night time i.e., 79.25 Leq dB (A)** the noise level in Leq dB (A) **exceeded** the prescribed standard of **45.0 Leq dB (A)** in night time.

6. Recommendations & Remedial measures for Control of Noise Pollution

1. **Planting more number of trees** around public places and Road side & **development of City Park** will help in sound absorption and reduce the deleterious effects.
2. Maintain distance between industrial area, bus terminals, railway stations etc. from the residential area.
3. Manufacturing of machines with specialized **sound absorbents** like glass wool, mineral wool, rubber, plastic, cork or neoprene and installing in soundproof chambers can reduce the noise.
4. Controlling human activities like minimum use of loudspeakers or amplifiers and repeated honing in traffic-prone areas.
5. **Using sound absorbing materials** during construction and filling gaps, material like acoustic tiles, hair felt, perforated plywood etc.
6. Strict action should be taken in the area around the **silence zone** (School, College & Hospital).
7. Noise pollution can be reduced by using public transport.
8. Diesel vehicle older than 15 years and high noise vehicle should be banned.

7. THE TEAM - PREPARATION OF NOISE REPORT (APRIL, 2023 TO MARCH, 2024)

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8. Photographs during Noise Monitoring

Figure.12 Pre-Deepawali & During-Deepawali Special Noise Monitoring carried out at Shastri Circle (Commercial Area), Jodhpur, Rajasthan and Month wise Noise Monitoring at ZBJS Colony Conservation Office (Residential Area), Jodhpur City.