

## **Report on Ambient Air Quality and Ambient Noise Monitoring during Diwali, 2022**

To study the impact of bursting of crackers and other related activities, the Himachal Pradesh State Pollution Control Board has conducted ambient air quality monitoring on the occasion of Diwali festival 2022 from 17.10.2022 to 23.10.2022 (Pre Diwali monitoring), on 24.10.2022 (Diwali Day monitoring) and 25.10.2022 to 31.10.2022 (Post Diwali monitoring). Ambient air quality monitoring at Shimla, Parwanoo, Dharamshala, Damtal (Jassur), Sunder Nagar, Paonta Sahib, Kala Amb, Una, Baddi, Nalagarh and Manali was carried out for parameters i.e. Respirable Particulate Matter (PM<sub>10</sub>), Respirable Particulate Matter (PM<sub>2.5</sub>), Sulphur Dioxide (SO<sub>2</sub>), Oxides of Nitrogen (NO<sub>x</sub>), Ozone (O<sub>3</sub>), Ammonia (NH<sub>3</sub>) and CO for 24 hour a day. Ambient air quality monitoring at Una & Nalagarh was carried out for parameters i.e. Respirable Particulate Matter (PM<sub>10</sub>), Respirable Particulate Matter (PM<sub>2.5</sub>), Sulphur Dioxide (SO<sub>2</sub>) & Oxides of Nitrogen (NO<sub>x</sub>) for 24 hour a day. Ambient air quality monitoring for CO (Carbon Monoxide) was carried out at Baddi. Ambient air quality at Manali was carried out for Respirable Particulate Matter (PM<sub>10</sub>), Respirable Particulate Matter (PM<sub>2.5</sub>), Sulphur Dioxide (SO<sub>2</sub>), Oxides of Nitrogen (NO<sub>x</sub>) & Ammonia (NH<sub>3</sub>) parameters for 24 hour a day. Further, the heavy metal monitoring and analysis was carried out at Shimla, Parwanoo, Paonta Sahib, Sundernagar and Dharamshala for Lead, Nickel, and Arsenic metals in PM<sub>10</sub>, and Aluminium, Barium and Iron metals in PM<sub>2.5</sub>. Ambient Noise monitoring was carried out at Shimla, Parwanoo, Paonta Shaib, Una, Dharamshala, Baddi, Kullu, Bilaspur, Kinnaur, Rampur and Chamba. The detail of ambient air & noise monitoring data is enclosed at Annexure- I-II & III.

### **Ambient Air Quality Monitoring report of Himachal Pradesh during Diwali Festival, 2022 are as under:**

#### **SHIMLA**

The ambient air quality monitoring at Shimla was carried out at one location i.e. Tekka Bench, Shimla. The 24 hour average value of RSPM (PM<sub>10</sub>) at Tekka Bench was observed 31.0µg/m<sup>3</sup> which is below the standard prescribed limit of 100 µg/m<sup>3</sup> on Diwali day. The concentration of RSPM (PM<sub>10</sub>) observed at Shimla during Diwali, 2022 was below than the concentration of RSPM (PM<sub>10</sub>) observed during Diwali last year i.e. 39.9µg/m<sup>3</sup>. The maximum concentration of RSPM (PM<sub>10</sub>) in the ambient air on Diwali day was observed as 42.5µg/m<sup>3</sup> at Tekka Bench, Shimla during 2:00PM-10:00PM. Similarly, 24 hour average value of RSPM (PM<sub>2.5</sub>) at Tekka Bench, Shimla was observed 16.0µg/m<sup>3</sup> respectively which is below than standard prescribed limit of 60µg/m<sup>3</sup> on Diwali day. The concentration of RSPM (PM<sub>2.5</sub>) observed at Shimla during Diwali, 2022 was comparatively lower than the concentration of RSPM (PM<sub>2.5</sub>) observed during Diwali last year i.e. 23.7µg/m<sup>3</sup>. The concentration of SO<sub>2</sub> and NO<sub>x</sub> was also observed well below the prescribed standards of 80µg/m<sup>3</sup> for 24 hour at both locations.

The average concentration of SO<sub>2</sub> and NO<sub>x</sub> was observed as 2.8µg/m<sup>3</sup> & 37.78µg/m<sup>3</sup> at Tekka Bench respectively on Diwali day which was well below the prescribed standard limit of 80µg/m<sup>3</sup>.

The 8 hour average O<sub>3</sub> concentration at Tekka Bench, Shimla was observed within the standard prescribed limit of 100µg/m<sup>3</sup> on Pre Diwali, Diwali & Post Diwali monitoring. The concentration of NH<sub>3</sub> at Tekka Bench was observed 3.7µg/m<sup>3</sup> during Diwali day which is below the standard prescribed limit of 400µg/m<sup>3</sup>.

The concentrations of Lead, Nickel & Arsenic in PM<sub>10</sub> at Shimla town were found within the standard prescribed limit of Lead 1.0µg/m<sup>3</sup>, Arsenic 6.0ng/m<sup>3</sup> & Nickel 20.0ng/m<sup>3</sup> during Pre Diwali, Diwali & Post Diwali monitoring.

### **PARWANOO**

The ambient air quality monitoring at Parwanoo was carried out at one locations i.e. Sector-IV Parwanoo. The 24 hour average RSPM (PM<sub>10</sub>) concentration at Sector-IV Parwanoo on Diwali day was observed 82.9µg/m<sup>3</sup> which is lower than the prescribed standard limit of 100µg/m<sup>3</sup>. The value of RSPM (PM<sub>10</sub>) concentration observed on pre-Diwali & post Diwali are within the prescribed limit. The maximum concentration of RSPM (PM<sub>10</sub>) in the ambient air on Diwali was observed as 119.3µg/m<sup>3</sup> during 2:00PM-10:00PM. The concentration of RSPM(PM<sub>10</sub>) 82.9µg/m<sup>3</sup> at Sector-IV, Parwanoo was observed comparatively much lower than the concentration of RSPM(PM<sub>10</sub>) observed during Diwali last year i.e. 90.2/m<sup>3</sup>. Similarly, 24 hour average RSPM (PM<sub>2.5</sub>) concentration in Parwanoo at Sector-IV was observed 32.9µg/m<sup>3</sup> which is within the standard prescribed limit of 60µg/m<sup>3</sup> on Diwali day. The concentration of RSPM(PM<sub>2.5</sub>) 32.9µg/m<sup>3</sup> at Sector-IV, Parwanoo was observed lower than the concentration of RSPM(PM<sub>2.5</sub>) observed during Diwali last year i.e. 39.8µg/m<sup>3</sup>. The average concentration of SO<sub>2</sub> and NO<sub>x</sub> at Sector-IV, Parwanoo was observed well below the prescribed standards of 80µg/m<sup>3</sup> for 24 hour i.e. 3.1 & 11.9µg/m<sup>3</sup> on Diwali day.

The 8 hour average concentration of O<sub>3</sub> at Sector-IV, Parwanoo was observed within the standard prescribed limit of 100µg/m<sup>3</sup> on Pre Diwali, Diwali day & Post Diwali. The value of NH<sub>3</sub> concentration was observed 0.2µg/m<sup>3</sup> on Diwali day are within the prescribed limit of 400µg/m<sup>3</sup>.

The concentrations of metals Lead, Nickel & Arsenic in PM<sub>10</sub> at Parwanoo town were found within the standard prescribed limit of Lead 1.0µg/m<sup>3</sup>, Arsenic 6.0ng/m<sup>3</sup> & Nickel 20.0ng/m<sup>3</sup> on Pre Diwali, Diwali & Post Diwali monitoring.

### **DHARAMSHALA**

The ambient air quality monitoring at Dharamshala was carried out at one location i.e. Dari, Dharamshala. The 24 hour average RSPM (PM<sub>10</sub>) concentration at

Dari, Dharamshala was observed above the prescribed standards of  $100 \mu\text{g}/\text{m}^3$  i.e.  $108 \mu\text{g}/\text{m}^3$  during Diwali day. The maximum concentration of RSPM ( $\text{PM}_{10}$ ) in the ambient air on Diwali, 2022 was observed as  $238.0 \mu\text{g}/\text{m}^3$  during 2:00PM-10:00PM. The concentration of RSPM ( $\text{PM}_{10}$ ) at Dari, Dharamshala was observed comparatively higher than the concentration of RSPM ( $\text{PM}_{10}$ ) observed during Diwali last year  $77 \mu\text{g}/\text{m}^3$ . Similarly, 24 hour average RSPM ( $\text{PM}_{2.5}$ ) concentration was observed  $68 \mu\text{g}/\text{m}^3$  higher than the standard prescribed limit of  $60 \mu\text{g}/\text{m}^3$  on Diwali day. The concentration of RSPM ( $\text{PM}_{2.5}$ ) at Dari, Dharamshala was observed comparatively higher than the concentration of RSPM ( $\text{PM}_{2.5}$ ) observed during Diwali last year i.e.  $44 \mu\text{g}/\text{m}^3$ . The average concentration on Diwali day of  $\text{SO}_2$  and  $\text{NO}_x$  at Dari, Dharamshala was observed well below the prescribed standards of  $80 \mu\text{g}/\text{m}^3$  for 24 hour i.e.  $2.0 \mu\text{g}/\text{m}^3$  (BDL) &  $4.5 \mu\text{g}/\text{m}^3$  (BDL) respectively.

The 8 hour average  $\text{O}_3$  concentration at Dari, Dharamshala was observed within the standard prescribed limit of  $100 \mu\text{g}/\text{m}^3$  on Pre Diwali, Diwali day & Post Diwali. The value of  $\text{NH}_3$  concentration was observed  $0.40 \mu\text{g}/\text{m}^3$  on Diwali day is within the prescribed limit of  $400 \mu\text{g}/\text{m}^3$ .

The concentrations of metals Lead, Nickel & Arsenic in  $\text{PM}_{10}$  at Dharamshala town were also found within the standard prescribed limit of Lead  $1.0 \mu\text{g}/\text{m}^3$ , Arsenic  $6.0 \text{ng}/\text{m}^3$  & Nickel  $20.0 \text{ng}/\text{m}^3$  on Pre Diwali, Diwali & Post Diwali monitoring.

### **DAMTAL (JASSUR)**

The ambient air quality monitoring at Damtal was carried out at one location i.e. Ram Gopal Mandir, Damtal. The 24 hour average RSPM ( $\text{PM}_{10}$ ) concentration at Damtal, Jassur was observed above the prescribed standards of  $100 \mu\text{g}/\text{m}^3$  i.e.  $103 \mu\text{g}/\text{m}^3$  on Diwali day, 2022. The maximum concentration of RSPM ( $\text{PM}_{10}$ ) in the ambient air was observed as  $180 \mu\text{g}/\text{m}^3$  on Diwali day during 2:00PM-10:00PM. The concentration of RSPM( $\text{PM}_{10}$ )  $103 \mu\text{g}/\text{m}^3$  was observed relatively higher than the concentration of RSPM( $\text{PM}_{10}$ ) observed during Diwali last year  $95 \mu\text{g}/\text{m}^3$ . Similarly, 24 hour average RSPM ( $\text{PM}_{2.5}$ ) concentration at Damtal, Jassur was observed  $66 \mu\text{g}/\text{m}^3$  higher than the standard prescribed limit of  $60 \mu\text{g}/\text{m}^3$  on Diwali day. The concentration of RSPM( $\text{PM}_{2.5}$ )  $66 \mu\text{g}/\text{m}^3$  was observed relatively higher than the concentration of RSPM( $\text{PM}_{2.5}$ ) observed during Diwali last year i.e.  $42 \mu\text{g}/\text{m}^3$ . The average concentration of  $\text{SO}_2$  and  $\text{NO}_x$  was observed as  $2.0 \mu\text{g}/\text{m}^3$  (BDL) and  $4.5 \mu\text{g}/\text{m}^3$  (BDL) respectively on Diwali day.

The 8 hour average  $\text{O}_3$  concentration at Damtal was observed within the standard prescribed limit of  $100 \mu\text{g}/\text{m}^3$  on Pre Diwali, Diwali & Post Diwali monitoring. The value of  $\text{NH}_3$  concentration was observed  $0.35 \mu\text{g}/\text{m}^3$  on Diwali day is within the prescribed limit of  $400 \mu\text{g}/\text{m}^3$ .

The concentrations of metals Lead, Nickel & Arsenic in PM<sub>10</sub> at Damtal town were also found within the standard prescribed limit of Lead 1.0µg/m<sup>3</sup>, Arsenic 6.0ng/m<sup>3</sup> & Nickel 20.0ng/m<sup>3</sup> on Pre Diwali, Diwali & Post Diwali monitoring.

### **SUNDER NAGAR**

The ambient air quality monitoring at Sunder Nagar was carried out at one location i.e. Regional Office, Sunder Nagar. The 24 hour average RSPM(PM<sub>10</sub>) concentration at Sunder Nagar was observed within the prescribed standards of 100 µg/m<sup>3</sup> i.e. 57.0µg/m<sup>3</sup> on Diwali day. The concentration of RSPM (PM<sub>10</sub>) observed during Diwali, 2022 was comparatively lower than the concentration of RSPM (PM<sub>10</sub>) observed during Diwali last year 62.3µg/m<sup>3</sup>. The maximum concentration of RSPM (PM<sub>10</sub>) in the ambient air on Diwali was observed as 62.0µg/m<sup>3</sup> during 10:00PM-06:00AM. Similarly, 24 hour average RSPM (PM<sub>2.5</sub>) concentration was also observed 28µg/m<sup>3</sup> lower than the standard prescribed limit of 60µg/m<sup>3</sup> on Diwali day. The concentration of RSPM (PM<sub>2.5</sub>) 28µg/m<sup>3</sup> was observed lower than the concentration of RSPM(PM<sub>2.5</sub>) observed during Diwali last year i.e. 27µg/m<sup>3</sup>. The concentration of SO<sub>2</sub> and NO<sub>x</sub> was observed well below the prescribed standards of 80µg/m<sup>3</sup> for 24 hour. The average concentration of SO<sub>2</sub> and NO<sub>x</sub> was observed as 2.0µg/m<sup>3</sup> (BDL) and 4.5µg/m<sup>3</sup> (BDL) which is below the prescribed standard of 80µg/m<sup>3</sup> for 24 hour.

The 8 hour average O<sub>3</sub> concentration at Sunder Nagar was observed within the standard prescribed limit of 100µg/m<sup>3</sup> on Pre Diwali, Diwali day & Post Diwali. The value of NH<sub>3</sub> concentration was observed 5.81µg/m<sup>3</sup> on Diwali day is within the prescribed limit of 400µg/m<sup>3</sup>.

The concentrations of metals Lead, Nickel & Arsenic in PM<sub>10</sub> at Sundernagar town were found within the standard prescribed limit of Lead 1.0µg/m<sup>3</sup>, Arsenic 6.0ng/m<sup>3</sup> & Nickel 20.0ng/m<sup>3</sup> on Pre Diwali, Diwali & Post Diwali monitoring.

### **PAONTA SAHIB**

The ambient air quality monitoring at Paonta Sahib was carried out at one location i.e. office building, Shubkhera, Paonta Sahib. The 24 hour average RSPM(PM<sub>10</sub>) concentration at Paonta Sahib was observed higher than the prescribed standards of 100µg/m<sup>3</sup> i.e. 119.6µg/m<sup>3</sup> on Diwali day. The maximum concentration of RSPM(PM<sub>10</sub>) in the ambient air was observed as 142.9µg/m<sup>3</sup> on Diwali day, 2022 during 10:00PM-06:00AM indicating the impact of bursting of crackers on the ambient air quality. The concentration of RSPM(PM<sub>10</sub>) 119.6µg/m<sup>3</sup> was observed relatively lower than the concentration of RSPM(PM<sub>10</sub>) observed during Diwali last year 128.4µg/m<sup>3</sup>. Similarly 24 hour average RSPM(PM<sub>2.5</sub>) concentration was also observed 67.0µg/m<sup>3</sup> higher than the standard prescribed limit of 60 µg/m<sup>3</sup> on Diwali day. The

concentration of RSPM(PM<sub>2.5</sub>) 67.0µg/m<sup>3</sup> was observed relatively lower than the concentration of RSPM(PM<sub>2.5</sub>) observed during Diwali last year i.e. 69.9µg/m<sup>3</sup>. The concentration of SO<sub>2</sub> and NO<sub>x</sub> was observed well below the prescribed standards of 80µg/m<sup>3</sup> for 24 hour. The average concentration of SO<sub>2</sub> and NO<sub>x</sub> was observed as 8.8µg/m<sup>3</sup> and 20.2µg/m<sup>3</sup> respectively on Diwali day.

The 8 hour average O<sub>3</sub> concentration at Paonta Sahib was observed within the standard prescribed limit of 100µg/m<sup>3</sup> on Pre Diwali, Diwali & Post Diwali monitoring. The value of NH<sub>3</sub> concentration was observed 2.4µg/m<sup>3</sup> on Diwali day is within the prescribed limit of 400µg/m<sup>3</sup>.

The concentrations of metals Lead, Nickel & Arsenic in PM<sub>10</sub> at Paonta Sahib town were also found within the standard prescribed limit of Lead 1.0µg/m<sup>3</sup>, Arsenic 6.0ng/m<sup>3</sup> & Nickel 20.0ng/m<sup>3</sup> on Pre Diwali, Diwali & Post Diwali monitoring.

### **KALA AMB**

The ambient air quality monitoring at Kala Amb was carried out at one location i.e. Trilokpur. The 24 hour average RSPM(PM<sub>10</sub>) concentration at Trilokpur was observed lower than the prescribed standards of 100 µg/m<sup>3</sup> i.e. 88.0µg/m<sup>3</sup> on Diwali day. The maximum concentration of RSPM(PM<sub>10</sub>) was observed as 104.3µg/m<sup>3</sup> on Diwali, 2022 during 10:00PM-06:00AM. The concentration of RSPM(PM<sub>10</sub>) 88.0µg/m<sup>3</sup> was observed comparatively lower than the concentration of RSPM(PM<sub>10</sub>) observed during Diwali last year 91.9µg/m<sup>3</sup>. Similarly, 24 hour average RSPM(PM<sub>2.5</sub>) concentration was observed 47.3µg/m<sup>3</sup> lower than the standard prescribed limit of 60 µg/m<sup>3</sup> on Diwali day. The concentration of RSPM(PM<sub>2.5</sub>) 47.3µg/m<sup>3</sup> was observed relatively lower than the concentration of RSPM(PM<sub>2.5</sub>) observed during Diwali last year i.e. 51.6µg/m<sup>3</sup>. The concentration of SO<sub>2</sub> and NO<sub>x</sub> was observed well below the prescribed standards of 80µg/m<sup>3</sup> for 24 hour. The average concentration of SO<sub>2</sub> and NO<sub>x</sub> was observed as 7.3µg/m<sup>3</sup> and 17.1µg/m<sup>3</sup> which is below the prescribed standard of 80µg/m<sup>3</sup> for 24 hour.

The 8 hour average O<sub>3</sub> concentration at Trilokpur, Kala Amb was observed within the standard prescribed limit of 100µg/m<sup>3</sup> on Pre Diwali, Diwali day & Post Diwali. The value of NH<sub>3</sub> concentration was observed 2.1µg/m<sup>3</sup> on Diwali day is within the prescribed limit of 400µg/m<sup>3</sup>.

The concentrations of metals Lead, Nickel & Arsenic in PM<sub>10</sub> at Kala Amb town were found within the standard prescribed limit of Lead 1.0µg/m<sup>3</sup>, Arsenic 6.0ng/m<sup>3</sup> & Nickel 20.0ng/m<sup>3</sup> on Pre Diwali, Diwali & Post Diwali monitoring.

## **UNA**

The ambient air quality monitoring at Una was carried out at one location i.e. Regional Office, Una. The 24 hour average RSPM(PM<sub>10</sub>) concentration at Una was also observed lower than the prescribed standards of 100µg/m<sup>3</sup> i.e. 92.9µg/m<sup>3</sup> on Diwali day. The maximum concentration of RSPM(PM<sub>10</sub>) in the ambient air was observed as 110.8µg/m<sup>3</sup> on Diwali day, 2022 during 10:00PM-6:00AM it indicating the impact of bursting of crackers on the ambient air quality. The concentration of RSPM(PM<sub>10</sub>) 92.9µg/m<sup>3</sup> was observed comparatively lower than the concentration of RSPM(PM<sub>10</sub>) observed during Diwali last year i.e. 98.9µg/m<sup>3</sup>. The concentration of RSPM(PM<sub>2.5</sub>) 44.0µg/m<sup>3</sup> was observed on Diwali day and is within the standard prescribed limit of 60µg/m<sup>3</sup> on Diwali day. The concentration of RSPM(PM<sub>2.5</sub>) 44.0µg/m<sup>3</sup> was observed comparatively much higher than the concentration of RSPM(PM<sub>2.5</sub>) observed during Diwali last year i.e. 40.8µg/m<sup>3</sup>. The concentration of SO<sub>2</sub> and NO<sub>x</sub> was observed well below the prescribed standards of 80µg/m<sup>3</sup> for 24 hour. The average concentration of SO<sub>2</sub> and NO<sub>x</sub> was observed as 4.2µg/m<sup>3</sup> and 13.84µg/m<sup>3</sup> which is below the prescribed standard of 80µg/m<sup>3</sup> for 24 hour.

## **BADDI**

The ambient air quality monitoring at Baddi was carried out at one location i.e. HIMUDA Complex, Phase-I, Baddi. The 24 hour average RSPM(PM<sub>10</sub>) concentration at Baddi was observed higher than the prescribed standards of 100 µg/m<sup>3</sup> i.e. 125.3µg/m<sup>3</sup> on Diwali day. The concentration of RSPM(PM<sub>10</sub>) observed during Diwali, 2022 was comparatively much lower than the concentration of RSPM(PM<sub>10</sub>) observed during Diwali last year i.e. 197µg/m<sup>3</sup>. The maximum concentration of RSPM(PM<sub>10</sub>) in the ambient air on Diwali was observed as 244.4µg/m<sup>3</sup> during 10:00PM-06:00PM. Similarly 24 hour average RSPM(PM<sub>2.5</sub>) concentration was also observed 77.3µg/m<sup>3</sup> higher than the standard prescribed limit of 60µg/m<sup>3</sup> on Diwali day. The concentration of RSPM(PM<sub>2.5</sub>) 77.3µg/m<sup>3</sup> was observed relatively higher than the concentration of RSPM(PM<sub>2.5</sub>) observed during Diwali last year 29.1µg/m<sup>3</sup>. The average concentration of SO<sub>2</sub> and NO<sub>x</sub> was observed as 22.0 µg/m<sup>3</sup> and 15.35µg/m<sup>3</sup> on Diwali which is below the prescribed standard of 80µg/m<sup>3</sup> for 24 hour. The average concentration of CO was observed as 0.40 mg/m<sup>3</sup> on Diwali which is below the prescribed standard of 2mg/m<sup>3</sup> for 8 hour. The value of NH<sub>3</sub> concentration was observed 11.4µg/m<sup>3</sup> on Diwali day is within the prescribed limit of 400µg/m<sup>3</sup>.

## **NALAGARH**

The ambient air quality monitoring at Nalagarh was carried out at one location i.e. Durga Devi Temple, Nalagarh. The 24 hour average RSPM(PM<sub>10</sub>) concentration at Nalagarh was also observed higher than the prescribed standards of 100 µg/m<sup>3</sup> i.e. 116.6µg/m<sup>3</sup> on Diwali day. The concentration of RSPM(PM<sub>10</sub>) observed during Diwali, 2022 was higher than the concentration of RSPM(PM<sub>10</sub>) observed during

Diwali last year  $115\mu\text{g}/\text{m}^3$ . The maximum concentration of RSPM( $\text{PM}_{10}$ ) in the ambient air on Diwali was observed as  $119\mu\text{g}/\text{m}^3$  during 02:00PM-10:00PM. Further; 24 hour average RSPM( $\text{PM}_{2.5}$ ) concentration was observed  $41.6\mu\text{g}/\text{m}^3$  within the standard prescribed limit of  $60\mu\text{g}/\text{m}^3$  on Diwali day. The concentration of RSPM( $\text{PM}_{2.5}$ ) observed during Diwali, 2022 was comparatively higher than the concentration of RSPM ( $\text{PM}_{2.5}$ ) observed during last year i.e.  $29.1\mu\text{g}/\text{m}^3$ . The average concentration of  $\text{SO}_2$  and  $\text{NO}_x$  was observed as  $2.0\mu\text{g}/\text{m}^3$  (BDL) and  $15.9\mu\text{g}/\text{m}^3$  on Diwali day.

### **MANALI**

The ambient air quality monitoring at Manali was carried out at one location i.e. Hadimba Matta Road, Manali. The 24 hour average RSPM( $\text{PM}_{10}$ ) concentration at Hadimba Matta Road, Manali was observed lower than the prescribed standards of  $100\mu\text{g}/\text{m}^3$  i.e.  $62.8\mu\text{g}/\text{m}^3$  on Diwali day. The concentration of RSPM( $\text{PM}_{10}$ ) observed during Diwali, 2022 was comparatively much lower than the concentration of RSPM( $\text{PM}_{10}$ ) observed during Diwali last year  $82.5\mu\text{g}/\text{m}^3$ . The maximum concentration of RSPM( $\text{PM}_{10}$ ) observed was  $111.7\mu\text{g}/\text{m}^3$  during 2:00PM-10:00PM on Diwali day indicating the impact of bursting of crackers on the ambient air quality. Similarly 24 hour average RSPM( $\text{PM}_{2.5}$ ) concentration was observed  $25.5\mu\text{g}/\text{m}^3$  within the standard prescribed limit of  $60\mu\text{g}/\text{m}^3$  on Diwali day. The concentration of RSPM( $\text{PM}_{2.5}$ )  $25.5\mu\text{g}/\text{m}^3$  was observed relatively higher than the concentration of RSPM( $\text{PM}_{2.5}$ ) observed during Diwali last year i.e.  $23.7\mu\text{g}/\text{m}^3$ . The concentration of  $\text{SO}_2$  and  $\text{NO}_x$  was observed well below the prescribed standards of  $80\mu\text{g}/\text{m}^3$  for 24 hour. The average concentration of  $\text{SO}_2$  and  $\text{NO}_x$  was observed as  $3.9\mu\text{g}/\text{m}^3$  (BDL) and  $4.5\mu\text{g}/\text{m}^3$  (BDL) which is below the prescribed standard of  $80\mu\text{g}/\text{m}^3$  for 24 hour.

The 24 hour average  $\text{NH}_3$  concentration at Hadimba Matta Road, Manali was observed  $3.43\mu\text{g}/\text{m}^3$  which is within the prescribed standard limit of  $400\mu\text{g}/\text{m}^3$  on Diwali day.

### **Ambient Noise monitoring report of Himachal Pradesh during Diwali Festival, 2022 are as under:**

Himachal Pradesh State Pollution Control Board has also conducted ambient noise monitoring on the occasion of Diwali festival, 2022, to study the impact of bursting of crackers and other related activities on 18.10.2022 (Normal day monitoring) and 24.10.2022 (Diwali day monitoring). The data of the ambient noise monitoring observed are summarized as Annexure-I.

### **SHIMLA**

The ambient noise level monitoring was conducted at Shimla (BCS Area) during Diwali festival on 18.10.2022 and 24.10.2022. The average ambient noise level

(Leq) monitored from 18:00hrs-24:00hrs on 18.10.2022, 24.10.2022 was observed as 48.7 dB(A) and 69.8 dB(A) respectively. The maximum impact of bursting of crackers on the ambient noise level on Diwali day was observed 100.7dB (A) between 09.00PM to 10.00PM. The ambient noise level 69.8 dB(A) at Shimla was observed lower than the noise level 77.9 dB(A) observed during Diwali last year.

### **PARWANOO**

The ambient noise level was monitored at Sector IV, Parwanoo during Diwali festival on 18.10.2022 and 24.10.2022. The ambient noise level (Leq) monitored from 18:00hrs-24:00hrs on 18.10.2022, 24.10.2022 was observed as 52.1 dB(A) and 65.4 dB(A) respectively. The maximum impact of bursting of crackers on the ambient noise level on Diwali day was observed between 07:00PM to 08:00PM, where noise level (Leq) of 99.7 dB(A) was observed.

The ambient noise level 65.4 dB (A) at Parwanoo was observed higher than the noise level 63.4 dB(A) observed during Diwali last year.

### **BILASPUR**

The ambient noise level was monitored at Bilaspur town during Diwali festival on 18.10.2022 and 24.10.2022. The ambient noise level (Leq) monitored from 18:00hrs-24:00hrs on 18.10.2022, 24.10.2022 was observed as 47.4 dB(A) and 58.8 dB(A) respectively. The maximum impact of bursting of crackers on the ambient noise level on Diwali day was observed between 08:00PM to 09:00PM and ambient noise level of 96.9 dB (A) was observed.

The ambient noise level 58.8 dB(A) at Bilaspur was observed higher than the noise level 57.7 dB(A) observed during Diwali last year.

### **CHAMBA**

The ambient noise level was monitored at Hardaspur Chamba (Residential zone).The ambient noise level (Leq) monitored at Hardaspur, Chamba (Residential zone), from 18:00hrs-24:00hrs on 18.10.2022 and 24.10.2022 was observed as 52.6 dB(A) and 68.4 dB(A) respectively in residential zone. The maximum impact of bursting of crackers on the ambient noise level on Diwali day was observed between 08:00PM to 09:00PM where noise level (Leq) of 95.6 dB(A) was observed.

The ambient noise level 68.4 dB(A) at Chamba was observed higher than the noise level 57.0 dB(A) observed during Diwali last year.



## **PAONTA SAHIB**

The ambient noise level was monitored at HIMUDA Colony, Shubkhera, Paonta Sahib during Diwali festival on 18.10.2022 and 24.10.2022. The ambient noise level (Leq) monitored from 18:00hrs-24:00hrs on 18.10.2022, 24.10.2022 was observed as 52.9 dB(A) and 57.9 dB(A) respectively. The maximum impact of bursting of crackers on the ambient noise level on Diwali day was observed between 08:00PM-09:00PM where noise level (Leq) of 75.9 dB(A) was observed.

The ambient noise level 57.9 dB(A) at Paonta Sahib was observed lower than the noise level 59.2 dB(A) observed during Diwali last year.

## **UNA**

The ambient noise level was monitored at Rakkar Colony, Una (Residential zone) on 18.10.2022 and 24.10.2022 (Pre Diwali and Diwali day).

The ambient noise level (Leq) at Rakkar Colony, Una (Residential zone) was monitored from 18:00hrs-24:00hrs on 18.10.2022 and 24.10.2022 and the values were observed as 46.1 dB(A) and 58.9 dB(A) respectively in Residential zone. The maximum impact of bursting of crackers on the ambient noise level on Diwali day was observed between 08:00PM to 10:00PM where noise level (Leq) of 83.5 dB(A) was observed.

The Ambient noise level 58.9 dB(A) at Una was observed higher than the level 51.3 dB(A) observed during Diwali last year.

## **BADDI**

The ambient noise level was monitored at Phase-I, Baddi during Diwali festival on 18.10.2022 and 24.10.2022. The ambient noise level (Leq) monitored from 18:00hrs-24:00hrs on 18.10.2022, 24.10.2022 was observed as 63.7 dB(A) and 68.8 dB(A) respectively. The maximum impact of bursting of crackers on the ambient noise level on Diwali day was observed between 09:00PM-10:00PM where noise level (Leq) of 100.2 dB(A) was observed.

The ambient noise level 68.8 dB(A) at Phase-I, Baddi for residential zone was observed higher than the noise level 66.5 dB(A) observed during Diwali last year.

## **RECONG PEO**

The ambient noise level was monitored at Recong Peo, District Kinnaur during Diwali festival on 18.10.2022 and 24.10.2022. The ambient noise level

(Leq) monitored from 18:00hrs-24:00hrs on 18.10.2022, 24.10.2022 was observed as 51.7 dB(A), and 65.8 dB(A) respectively. The maximum impact of bursting of crackers on the ambient noise level on Diwali day was observed between 07:00PM to 08:00PM where noise level (Leq) of 93.4 dB(A) was observed.

The ambient noise level 65.8 dB(A) at Recong Peo was observed lower than the noise level 68.9 dB(A) observed during Diwali last year.

### **RAMPUR BUSHAR**

The ambient noise level was monitored at Rampur, Distt. Shimla during Diwali festival on 18.10.2022 and 24.10.2022. The ambient noise level (Leq) monitored from 18:00hrs-24:00hrs on 18.10.2022, 24.10.2022 was observed as 52.3 dB(A) and 66.3 dB(A) respectively. The maximum impact of bursting of crackers on the ambient noise level on Diwali day was observed between 06:00PM to 07:00PM where noise level (Leq) of 91.5 dB (A) was observed.

The ambient noise level 66.3 dB (A) at Rampur Bushar was also observed lower the noise level 79.5 dB (A) observed during Diwali last year.

### **DHARAMSHALA**

The ambient noise level was monitored on Regional office Dharamshala during Diwali festival on 18.10.2022 and 24.10.2022. The ambient noise level (Leq) monitored from 18:00hrs-24:00hrs on 18.10.2022, 24.10.2022 was observed as 47.1 dB(A) and 69.7 dB(A) respectively. The maximum impact of bursting of crackers on the ambient noise level on Diwali day was observed between 09:00PM to 10:00PM where noise level (Leq) of 88.7 dB(A) was observed.

The ambient noise level 69.7 dB(A) at Dharamshala was observed higher than the noise level 57.0 dB(A) observed during Diwali last year.

### **KULLU**

The ambient noise level was monitored near Dhalpur Ground, Kullu during Diwali festival on 18.10.2022 and 24.10.2022. The ambient noise level (Leq) monitored from 18:00hrs-24:00hrs on 18.10.2022, 24.10.2022 was observed as 52.1 dB(A) and 65.8 dB(A) respectively. The maximum impact of bursting of crackers on the ambient noise level on Diwali day was observed between 10:00PM to 11:00PM where noise level (Leq) of 94.1 dB (A) was observed.

The ambient noise level 65.8 dB(A) at near Dhalpur Ground, Kullu was observed higher than the noise level 64.3 dB(A) observed during Diwali last year.

## **CONCLUSION**

The concentration of RSPM (PM<sub>10</sub> and PM<sub>2.5</sub>), NO<sub>x</sub>, SO<sub>2</sub>, NH<sub>3</sub>, O<sub>3</sub> & CO level in the ambient air observed on Diwali, 2022 was comparatively more than the values observed on the normal days which indicates the impact of bursting of fire crackers and other activities on the ambient air quality. During Diwali, 2022 the concentration of SO<sub>2</sub>, NO<sub>x</sub>, NH<sub>3</sub>, O<sub>3</sub> & CO were observed within the standard limit in all the monitoring stations whereas, the concentration of **RSPM(PM<sub>10</sub>)** has **exceeded** the prescribed standard limit of 100µg/m<sup>3</sup> for 24 hour at **Dharamshala, Damtal, Paonta Sahib, Baddi & Nalagarh**, however, the RSPM(PM<sub>10</sub>) concentration was observed within the **prescribed standard at Shimla, Parwanoo, Sundernagar, Kala Amb, Una & Manali on Diwali day**. Further, the concentration of **RSPM(PM<sub>10</sub>)** at **Dharamshala, Damtal & Nalagarh** were observed **more** than the concentration observed during **Diwali, 2021**, whereas, concentration of **RSPM(PM<sub>10</sub>)** at **Shimla, Parwanoo, Sundernagar, Paonta Sahib, Kala Amb, Una, Baddi and Manali** stations were observed comparatively **lower** than the concentration of RSPM observed during Diwali, 2021.

Similarly, the Concentration of RSPM(PM<sub>2.5</sub>) has **exceeded** the prescribed standard limit of 60µg/m<sup>3</sup> for 24 hour at **Dharamshala, Damtal, Paonta Sahib and Baddi** however, the RSPM(PM<sub>2.5</sub>) concentration was observed within the **prescribed standard at Shimla, Parwanoo, Sundernagar, Kala Amb, Una, Nalagarh & Manali on Diwali day**.

There was gradual decrease in the concentration of **RSPM (PM<sub>10</sub> & PM<sub>2.5</sub>)**, **SO<sub>2</sub>, NO<sub>x</sub>, NH<sub>3</sub>, O<sub>3</sub> & CO** after Diwali festival at all the monitoring stations.

Further, the **heavy metal analysis** were also carried out in all Laboratories i.e. **Shimla, Parwanoo, Paonta Sahib, Sunder Nagar & Dharamshala**. The concentrations of Lead, Nickel & Arsenic in PM<sub>10</sub> and Aluminium, Barium and Iron in PM<sub>2.5</sub> was monitored for consecutive 15 days and the Lead, Nickel and Arsenic parameters were found within the prescribed limit as per NAAQMS, 2009 on Pre Diwali, Diwali & Post Diwali period.

It can be concluded from the ambient air quality monitoring carried out by the State Board that w.r.t. PM<sub>10</sub> concentration on Diwali day, **Dharamshala, Damtal Paonta Sahib, Baddi & Nalagarh towns were highest polluted** and **Shimla was cleanest** town in the State and with respect to RSPM(PM<sub>2.5</sub>) concentration **Dharamshala, Damtal, Paonta Sahib and Baddi was highest polluted** and **Shimla & Manali were cleanest** towns. With respect to **SO<sub>2</sub> & NO<sub>x</sub>** concentrations all values are within the standard prescribed limit. The **SO<sub>2</sub>** concentration was observed highest at **Baddi 22.0 µg/m<sup>3</sup>** and the concentration of **NO<sub>x</sub>** was observed highest at **Shimla 37.78µg/m<sup>3</sup>**. The concentrations of **NH<sub>3</sub> and O<sub>3</sub>** at all locations were observed within

the standard prescribed limit on Pre Diwali, Diwali and Post Diwali monitoring. The Concentration of metals (Lead, Nickel & Arsenic) in **Shimla, Parwanoo, Paonta Sahib, Dharamshala and Sunder Nagar** was observed within the standard prescribed limit on Pre Diwali, Diwali and Post Diwali monitoring.

Annexure-I														
Area	Zone	Location	Annexure-I-Data of Noise Level											
			Date						Date					
			18.10.2022						24.10.2022					
			18:00Hrs-24:00Hrs						18:00Hrs-24:00Hrs					
			dB (A) Leq	L <sub>max</sub>	L <sub>min</sub>	L <sub>10</sub>	L <sub>50</sub>	L <sub>90</sub>	dB (A) Leq	L <sub>max</sub>	L <sub>min</sub>	L <sub>10</sub>	L <sub>50</sub>	L <sub>90</sub>
Shimla	C	Shimla (BCS Area)	48.7	74.8	32.0	-	-	-	69.8	100.7	48.0	-	-	-
Parwanoo	C/R	Sector-4, Parwanoo	52.1	90.4	39.9	54.4	46.3	41.1	65.4	99.7	41.3	62.8	53.8	49.1
Poanta Sahib	R	Regional Office Himuda Colony, Shubkhera, Poanta Sahib	52.9	66.5	32.1	53.7	48.2	45.3	57.9	75.9	32.6	54.6	52.7	55.0
Una	R	Rakkar Colony	46.1	75.2	31.5	49.4	41.2	35.2	58.9	83.5	31.0	60.4	49.9	43.3
Dharamshala	R	Regional office Dharamshala	47.1	65.9	30.6	-	-	-	69.7	88.7	40.6	-	-	-
Baddi	C/R	Baddi Phase-I	63.7	81.3	39.4	60.8	50.7	46.5	68.8	100.2	39.2	67.8	59.7	53.9
Kullu	C	Near Dhalpur Ground, Kullu	52.1	90.4	39.9	54.4	46.3	41.1	65.8	94.1	41.9	66.5	57.1	52.5
Bilaspur	C/R	Housing Board Colony Bilaspur	47.4	76.9	35.3	41.5	50.1	47.1	58.8	96.9	39.0	53.3	57.8	54.9
Kinnaur	C	Recongpeo (Distt.Kinnaur)	51.7	75.1	30.1	-	-	-	65.8	93.4	28.1	-	-	-
Rampur	C	Rampur Bushar (Distt. Shimla)	52.3	73.0	28.0	-	-	-	66.3	91.5	28.2	-	-	-
Chamba	R	Regional Office Chamba	52.6	64.8	26.8	-	-	-	68.4	95.6	11.1	-	-	-

\* S = Silence, C = Commercial, I = Industrial, R=Residential,

## ANNEXURE-II (a)

RSPM(PM10) in ug/m<sup>3</sup>24 Hour Standard for Industrial, Residential & Others=100 ug/m<sup>3</sup>

Area and Location	Time of sampling	Pre Diwali Monitoring							Diwali Day	Post Diwali Monitoring						
		17.10.2022	18.10.2022	19.10.2022	20.10.2022	21.10.2022	22.10.2022	23.10.2022	24.10.2022	25.10.2022	26.10.2022	27.10.2022	28.10.2022	29.10.2022	30.10.2022	31.10.2022
Tekka Bench, The Mall, Shimla	6AM-2PM	9.9	25.9	36.6	23.9	38.0	39.3	22.7	31.2	28.0	19.3	20.4	23.5	36.2	29.4	24.1
	2PM-10PM	24.6	22.0	37.8	45.5	41.2	53.4	33.5	42.5	35.0	29.6	28.4	29.6	43.1	28.0	27.9
	10PM-6AM	20.9	13.3	18.4	24.4	26.6	25.4	19.9	19.1	17.9	15.5	16.7	17.7	27.2	21.0	18.2
	<b>24 hour Avg.</b>	<b>18.5</b>	<b>20.4</b>	<b>30.9</b>	<b>31.3</b>	<b>35.3</b>	<b>39.3</b>	<b>25.4</b>	<b>31.0</b>	<b>27.0</b>	<b>21.5</b>	<b>21.8</b>	<b>23.6</b>	<b>35.5</b>	<b>26.1</b>	<b>23.4</b>
Parwanoo, Sector-IV	6AM-2PM	37.9	27.7	34.7	51.7	33.8	43.8	41.5	36.2	25.8	27.0	29.9	48.5	37.6	69.8	38.4
	2PM-10PM	23.6	49.3	25.8	20.4	22.5	54.2	56.1	119.3	24.2	30.0	27.2	31.9	35.9	88.3	16.7
	10PM-6AM	21.5	34.3	50.4	35.5	64.9	51.5	37.8	93.2	52.6	40.0	52.2	56.2	37.9	35.2	20.1
	<b>24 hour Avg.</b>	<b>27.7</b>	<b>37.1</b>	<b>37.0</b>	<b>35.9</b>	<b>40.4</b>	<b>49.8</b>	<b>45.2</b>	<b>82.9</b>	<b>34.2</b>	<b>32.3</b>	<b>36.4</b>	<b>45.5</b>	<b>35.1</b>	<b>64.4</b>	<b>25.0</b>
Dari, Dharamshala	6AM-2PM	38.0	27.0	52.0	30.0	39.0	37.0	39.0	54.0	44.0	36.0	42.0	43.0	40.0	56.0	49.0
	2PM-10PM	72.0	41.0	85.0	46.0	59.0	51.0	50.0	238.0	69.0	45.0	59.0	63.0	75.0	81.0	67.0
	10PM-6AM	34.0	27.0	38.0	27.0	27.0	20.0	20.0	33.0	23.0	10.0	22.0	46.0	50.0	23.0	22.0
	<b>24 hour Avg.</b>	<b>48.0</b>	<b>31.7</b>	<b>58.3</b>	<b>34.0</b>	<b>42.0</b>	<b>36.0</b>	<b>36.3</b>	<b>108.0</b>	<b>45.0</b>	<b>30.0</b>	<b>41.0</b>	<b>51.0</b>	<b>55.0</b>	<b>53.0</b>	<b>46.0</b>
Ram Gopal Mandir, Damtal	6AM-2PM	40.0	27.0	58.0	47.0	48.0	42.0	14.0	25.0	55.0	44.0	50.0	43.0	48.0	40.0	66.0
	2PM-10PM	63.0	53.0	84.0	38.0	51.0	50.0	45.0	180.0	64.0	63.0	68.0	69.0	70.0	57.0	69.0
	10PM-6AM	50.0	31.0	72.0	36.0	34.0	28.0	66.0	105.0	28.0	46.0	55.0	36.0	39.0	56.0	58.0
	<b>24 hour Avg.</b>	<b>51.0</b>	<b>37.0</b>	<b>71.3</b>	<b>40.0</b>	<b>44.0</b>	<b>40.0</b>	<b>42.0</b>	<b>103.0</b>	<b>49.0</b>	<b>51.0</b>	<b>58.0</b>	<b>49.0</b>	<b>52.0</b>	<b>51.0</b>	<b>64.0</b>

**ANNEXURE-II (a)**

Area and Location	Time of sampling	Pre Diwali Monitoring							Diwali Day	Post Diwali Monitoring						
		17.10.2022	18.10.2022	19.10.2022	20.10.2022	21.10.2022	22.10.2022	23.10.2022	24.10.2022	25.10.2022	26.10.2022	27.10.2022	28.10.2022	29.10.2022	30.10.2022	31.10.2022
<b>Regional Office, Sunder Nagar</b>	6AM-2PM	45.0	64.0	33.0	54.0	40.0	54.0	54.0	56.0	55.0	62.0	55.0	63.0	51.0	59.0	48.0
	2PM-10PM	49.0	55.0	33.0	57.0	38.0	44.0	42.0	54.0	42.0	54.0	41.0	57.0	52.0	49.0	39.0
	10PM-6AM	57.0	69.0	61.0	61.0	59.0	50.0	40.0	62.0	48.0	57.0	48.0	54.0	47.0	57.0	46.0
	<b>24 hour Avg.</b>	<b>50.0</b>	<b>63.0</b>	<b>42.0</b>	<b>57.0</b>	<b>46.0</b>	<b>49.0</b>	<b>45.0</b>	<b>57.0</b>	<b>48.0</b>	<b>58.0</b>	<b>48.0</b>	<b>58.0</b>	<b>50.0</b>	<b>55.0</b>	<b>44.0</b>
<b>Office Building, Shubkhera, Poanta Sahib</b>	6AM-2PM	49.6	50.1	104.4	77.0	127.2	65.8	66.2	92.8	126.7	70.2	99.4	43.7	92.7	64.3	72.6
	2PM-10PM	92.5	99.1	120.0	125.9	114.7	108.5	86.6	123.0	110.3	116.9	62.8	87.4	147.2	67.9	91.3
	10PM-6AM	43.1	39.9	133.7	90.4	72.2	55.2	64.8	142.9	85.2	51.9	91.6	65.8	71.3	54.4	60.7
	<b>24 hour Avg.</b>	<b>61.7</b>	<b>63.0</b>	<b>119.3</b>	<b>97.8</b>	<b>104.7</b>	<b>76.5</b>	<b>72.5</b>	<b>119.6</b>	<b>107.4</b>	<b>79.7</b>	<b>84.6</b>	<b>65.6</b>	<b>103.7</b>	<b>62.2</b>	<b>74.9</b>
<b>Trilokpur, Kala Amb</b>	6AM-2PM	47.5	23.7	9.9	18.8	71.9	76.2	82.6	71.4	57.7	59.9	76.8	54.5	62.0	63.0	86.7
	2PM-10PM	41.6	40.5	22.2	45.5	77.1	92.1	59.3	88.3	68.8	54.9	59.6	71.5	68.1	58.3	74.3
	10PM-6AM	69.6	28.3	33.1	23.1	91.5	46.0	52.0	104.3	55.8	43.3	52.4	43.9	73.7	46.0	56.3
	<b>24 hour Avg.</b>	<b>52.9</b>	<b>30.8</b>	<b>21.8</b>	<b>29.1</b>	<b>80.2</b>	<b>71.4</b>	<b>64.6</b>	<b>88.0</b>	<b>60.7</b>	<b>52.7</b>	<b>62.9</b>	<b>56.6</b>	<b>67.9</b>	<b>55.8</b>	<b>72.4</b>
<b>Regional Office, Una</b>	6AM-2PM	54.2	57.3	60.2	56.7	51.3	65.2	69.8	70.4	77.3	63.5	63.5	45.8	59.2	57.3	54.8
	2PM-10PM	57.3	63.5	61.9	66.9	65.0	78.1	82.9	97.5	69.8	71.9	76.4	66.3	70.2	74.0	65.4
	10PM-6AM	-	-	58.8	51.0	45.8	59.4	78.1	110.8	74.6	59.4	58.8	50.6	55.6	49.0	50.2
	<b>24 hour Avg.</b>	<b>55.7</b>	<b>60.4</b>	<b>60.3</b>	<b>58.2</b>	<b>54.0</b>	<b>67.6</b>	<b>76.9</b>	<b>92.9</b>	<b>73.9</b>	<b>64.9</b>	<b>66.2</b>	<b>54.2</b>	<b>61.7</b>	<b>60.1</b>	<b>56.8</b>
<b>HIMUDA Complex, Phase-I, Baddi</b>	6AM-2PM	79.4	181.6	76.5	134.1	48.3	92.0	95.4	62.6	237.9	92.0	45.8	-	78.9	144.0	78.8
	2PM-10PM	133.3	140.8	99.6	127.3	130.2	142.7	117.2	68.8	85.1	76.7	107.7	144.9	132.5	162.5	122.1
	10PM-6AM	282.1	145.7	135.5	129.7	201.3	173.6	121.5	244.4	114.9	101.0	101.0	141.4	150.2	202.1	131.2
	<b>24 hour Avg.</b>	<b>164.9</b>	<b>156.0</b>	<b>103.9</b>	<b>130.4</b>	<b>126.6</b>	<b>136.1</b>	<b>111.3</b>	<b>125.3</b>	<b>146.0</b>	<b>89.9</b>	<b>84.8</b>	<b>143.1</b>	<b>120.5</b>	<b>169.6</b>	<b>110.7</b>

## ANNEXURE-II (a)

Area and Location	Time of sampling	Pre Diwali Monitoring							Diwali Day	Post Diwali Monitoring						
		17.10.2022	18.10.2022	19.10.2022	20.10.2022	21.10.2022	22.10.2022	23.10.2022	24.10.2022	25.10.2022	26.10.2022	27.10.2022	28.10.2022	29.10.2022	30.10.2022	31.10.2022
Duega Devi Temple, Nalagarh	6AM-2PM	64.0	82.0	79.0	73.0	83.0	118.0	104.0	112.0	110.0	81.0	86.0	80.0	90.0	82.0	69.0
	2PM-10PM	61.0	88.0	86.0	94.0	89.0	110.0	127.0	119.0	99.0	96.0	92.0	91.0	99.0	91.0	78.0
	10PM-6AM	71.0	81.0	84.0	101.0	84.0	104.0	114.0	119.0	96.0	83.0	80.0	76.0	92.0	79.0	69.0
	<b>24 hour Avg.</b>	<b>65.0</b>	<b>83.0</b>	<b>83.0</b>	<b>89.0</b>	<b>85.0</b>	<b>110.0</b>	<b>115.0</b>	<b>116.6</b>	<b>101.7</b>	<b>86.0</b>	<b>86.0</b>	<b>82.0</b>	<b>93.0</b>	<b>84.0</b>	<b>72.0</b>
Hadimba Matta Road, Manali	6AM-2PM	37.9	26.9	34.6	41.4	35.8	34.9	34.7	20.8	35.6	34.9	37.1	17.2	32.0	32.0	52.5
	2PM-10PM	79.0	49.2	64.5	22.7	98.5	76.0	67.1	111.7	87.5	64.4	65.0	65.9	69.1	72.0	58.7
	10PM-6AM	27.5	26.5	22.5	32.2	23.3	21.8	21.2	55.9	48.3	23.7	16.1	25.6	26.5	37.0	20.6
	<b>24 hour Avg.</b>	<b>48.1</b>	<b>34.2</b>	<b>40.6</b>	<b>32.1</b>	<b>52.5</b>	<b>44.2</b>	<b>41.0</b>	<b>62.8</b>	<b>57.1</b>	<b>41.0</b>	<b>39.4</b>	<b>36.4</b>	<b>42.6</b>	<b>47.0</b>	<b>43.9</b>





**ANNEXURE-II (b)**

Area and Location	Time of sampling	Pre Diwali Monitoring							Diwali Day	Post Diwali Monitoring						
		17.10.2022	18.10.2022	19.10.2022	20.10.2022	21.10.2022	22.10.2022	23.10.2022	24.10.2022	25.10.2022	26.10.2022	27.10.2022	28.10.2022	29.10.2022	30.10.2022	31.10.2022
<b>Ram Gopal Mandir Damtal</b>	6AM-2PM	5.28	5.69	4.47	5.37	-	5.69	6.50	5.69	6.10	6.10	6.50	6.10	6.10	6.50	6.10
		7.32	6.91	6.10	6.04	5.69	6.91	5.69	7.32	7.72	7.32	6.91	6.91	7.32	7.32	7.72
	2PM-10PM	7.72	8.54	7.32	8.82	7.32	9.76	6.91	9.29	8.54	7.72	8.13	7.72	8.94	8.54	8.13
		9.35	8.13	8.13	8.13	6.50	8.94	8.54	10.16	9.35	8.54	8.54	8.94	8.13	8.94	8.54
	10PM-6AM	8.13	6.50	8.54	6.10	8.13	7.32	9.76	8.54	8.94	8.13	7.32	7.32	7.72	8.13	6.91
		6.91	5.28	5.28	7.59	6.10	6.91	8.13	6.91	6.50	6.91	6.10	6.50	6.50	6.91	5.28
	<b>24 hour Avg.</b>	<b>BDL</b>	<b>BDL</b>	<b>BDL</b>	<b>BDL</b>	<b>BDL</b>	<b>BDL</b>	<b>BDL</b>	<b>BDL</b>	<b>BDL</b>	<b>BDL</b>	<b>BDL</b>	<b>BDL</b>	<b>BDL</b>	<b>BDL</b>	<b>BDL</b>
<b>Regional Office, Sunder Nagar</b>	6AM-2PM	7.00	6.16	6.64	5.68	6.64	7.00	7.58	6.64	7.00	6.64	6.16	6.64	7.00	7.58	7.58
		8.05	7.00	7.58	9.47	7.58	8.05	8.53	8.05	8.05	7.58	7.58	8.05	8.53	8.53	8.53
	2PM-10PM	9.00	9.47	8.53	8.05	8.53	9.00	9.47	9.00	8.53	8.53	9.00	8.53	9.00	9.47	8.05
		9.95	8.53	9.47	7.00	9.95	9.47	9.95	10.43	9.47	9.95	8.53	9.47	9.47	9.00	9.00
	10PM-6AM	8.53	7.58	8.05	9.00	8.05	8.53	8.05	8.53	7.58	8.05	8.05	7.58	8.05	9.95	9.47
		7.58	6.64	7.00	7.58	7.00	7.58	7.00	7.58	6.61	7.00	7.00	6.16	7.58	7.00	7.00
	<b>24 hour Avg.</b>	<b>BDL</b>	<b>BDL</b>	<b>BDL</b>	<b>BDL</b>	<b>BDL</b>	<b>BDL</b>	<b>BDL</b>	<b>BDL</b>	<b>BDL</b>	<b>BDL</b>	<b>BDL</b>	<b>BDL</b>	<b>BDL</b>	<b>BDL</b>	<b>BDL</b>
<b>Office Building, Shubkhera, Poanta Sahib</b>	6AM-2PM	9.60	15.55	11.89	9.60	12.80	---	16.46	16.01	18.75	11.89	14.18	12.80	11.89	14.18	12.35
		13.72	16.46	13.72	11.89	15.09	13.72	13.72	17.07	14.63	12.80	10.98	14.18	14.63	12.35	13.72
	2PM-10PM	17.84	17.68	17.07	16.01	16.01	13.72	17.38	19.66	16.46	15.09	14.63	15.55	13.72	16.46	14.63
		15.55	14.63	18.29	19.21	19.21	20.12	20.12	21.04	19.66	18.29	17.84	16.92	17.84	18.29	15.55
	10PM-6AM	13.59	10.98	12.80	13.72	16.46	17.84	18.29	26.07	17.38	14.63	14.18	14.63	14.63	13.72	11.43
		10.98	10.52	9.60	10.98	12.35	15.09	16.01	21.49	14.63	12.35	11.89	11.43	10.98	10.52	9.60
	<b>24 hour Avg.</b>	<b>13.55</b>	<b>14.30</b>	<b>13.90</b>	<b>13.57</b>	<b>15.32</b>	<b>16.10</b>	<b>17.00</b>	<b>20.22</b>	<b>16.92</b>	<b>14.18</b>	<b>13.95</b>	<b>14.25</b>	<b>13.95</b>	<b>14.25</b>	<b>12.88</b>

**ANNEXURE-II (b)**

Area and Location	Time of sampling	Pre Diwali Monitoring							Diwali Day	Post Diwali Monitoring						
		17.10.2022	18.10.2022	19.10.2022	20.10.2022	21.10.2022	22.10.2022	23.10.2022	24.10.2022	25.10.2022	26.10.2022	27.10.2022	28.10.2022	29.10.2022	30.10.2022	31.10.2022
<b>Trilokpur, Kala Amb</b>	6AM-2PM	8.23	13.72	14.02	15.09	13.72	14.18	16.01	13.72	14.63	10.98	11.89	10.52	10.06	9.60	10.98
		11.43	15.24	---	13.26	15.55	16.46	14.63	15.55	13.26	12.35	10.98	13.72	11.89	11.43	12.80
	2PM-10PM	14.18	16.92	---	16.46	18.29	17.84	20.12	18.29	15.09	14.18	14.63	15.09	15.09	13.72	14.63
		16.01	18.75	16.92	17.84	16.92	19.66	18.29	20.58	17.84	16.46	14.18	16.46	16.01	15.09	16.92
	10PM-6AM	10.52	13.26	12.35	14.18	13.26	14.18	15.09	18.29	16.01	13.72	13.26	12.80	12.80	12.35	13.72
		7.32	12.20	10.52	10.06	11.89	13.26	14.63	16.01	12.80	11.43	11.89	11.43	10.52	10.52	11.89
	<b>24 hour Avg.</b>	<b>11.28</b>	<b>15.02</b>	<b>13.45</b>	<b>14.48</b>	<b>14.94</b>	<b>15.93</b>	<b>16.46</b>	<b>17.07</b>	<b>14.94</b>	<b>13.19</b>	<b>12.80</b>	<b>13.34</b>	<b>12.73</b>	<b>12.12</b>	<b>13.49</b>
<b>HIMUDA Complex, Phase-I, Baddi</b>	6AM-2PM	14.49	25.82	7.74	15.21	8.74	6.67	8.74	10.10	18.91	16.77	9.00	6.94	6.70	18.99	7.44
		19.89	26.23	12.64	8.71	12.48	6.36	12.04	8.94	12.50	13.47	12.78	9.92	14.41	21.98	8.94
	2PM-10PM	20.63	26.11	36.39	15.00	13.87	15.06	19.34	10.34	9.17	15.90	22.85	20.25	18.54	18.84	21.41
		9.91	8.06	6.41	12.66	11.84	7.89	6.09	4.75	4.72	5.71	7.51	9.57	7.69	8.61	8.58
	10PM-6AM	29.23	26.05	18.94	24.31	28.13	22.55	13.47	19.11	16.98	14.36	26.76	24.25	19.36	24.71	20.73
		65.59	21.90	9.37	5.60	18.15	19.97	8.84	38.86	14.27	9.31	9.60	9.71	11.31	10.91	11.91
	<b>24 hour Avg.</b>	<b>26.62</b>	<b>22.36</b>	<b>15.25</b>	<b>13.58</b>	<b>15.54</b>	<b>13.08</b>	<b>11.42</b>	<b>15.35</b>	<b>12.76</b>	<b>12.59</b>	<b>14.75</b>	<b>13.44</b>	<b>13.00</b>	<b>17.34</b>	<b>13.17</b>
<b>Durga Devi Temple, Nalagarh</b>	6AM-2PM	15.26	12.49	11.56	12.49	12.95	16.19	12.95	15.73	13.41	12.95	12.95	12.95	13.47	13.88	12.03
		13.88	15.26	14.34	9.71	9.71	12.49	10.17	14.80	11.56	16.19	14.34	16.19	11.56	12.49	14.34
	2PM-10PM	12.95	13.88	15.73	12.95	16.19	15.73	13.41	13.41	12.49	15.26	15.73	13.88	12.49	9.72	11.56
		13.88	12.95	12.03	12.49	13.88	9.71	18.04	17.12	12.95	16.19	13.88	12.95	12.95	15.26	9.71
	10PM-6AM	9.71	13.88	15.26	15.73	12.95	16.19	12.49	15.73	16.19	14.34	16.65	9.71	16.19	12.95	15.26
		12.95	15.26	12.95	14.34	15.26	12.95	11.56	18.97	18.04	13.88	15.73	15.26	18.04	20.35	12.03
	<b>24 hour Avg.</b>	<b>13.10</b>	<b>13.95</b>	<b>13.64</b>	<b>13.01</b>	<b>13.49</b>	<b>13.87</b>	<b>13.10</b>	<b>15.96</b>	<b>14.10</b>	<b>14.80</b>	<b>14.88</b>	<b>13.49</b>	<b>14.10</b>	<b>14.10</b>	<b>12.48</b>





**ANNEXURE-II (c)**

Area and Location	Time of sampling	Pre Diwali Monitoring							Diwali Day	Post Diwali Monitoring						
		17.10.2022	18.10.2022	19.10.2022	20.10.2022	21.10.2022	22.10.2022	23.10.2022	24.10.2022	25.10.2022	26.10.2022	27.10.2022	28.10.2022	29.10.2022	30.10.2022	31.10.2022
Ram Gopal Mandir Damtal	6AM-2PM	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
	2PM-10PM	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
	10PM-6AM	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
	<b>24 hour Avg.</b>	<b>BDL</b>	<b>BDL</b>	<b>BDL</b>	<b>BDL</b>	<b>BDL</b>	<b>BDL</b>	<b>BDL</b>	<b>BDL</b>	<b>BDL</b>	<b>BDL</b>	<b>BDL</b>	<b>BDL</b>	<b>BDL</b>	<b>BDL</b>	<b>BDL</b>
Regional Office, Sunder Nagar	6AM-2PM	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
		1.1	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
	2PM-10PM	0.4	1.1	0.8	0.4	0.8	0.8	1.1	0.8	0.8	0.8	1.1	0.8	0.4	0.4	0.8
		0.8	0.8	1.1	1.1	1.1	1.1	0.8	1.1	1.1	1.1	0.8	1.1	1.1	1.1	1.1
	10PM-6AM	0.8	0.4	0.8	0.4	0.8	0.8	0.8	1.1	0.8	0.4	0.8	0.4	0.8	0.8	0.8
		0.8	0.4	0.4	0.8	0.4	0.8	0.4	0.8	0.4	0.4	0.4	0.4	0.4	0.4	0.4
	<b>24 hour Avg.</b>	<b>BDL</b>	<b>BDL</b>	<b>BDL</b>	<b>BDL</b>	<b>BDL</b>	<b>BDL</b>	<b>BDL</b>	<b>BDL</b>	<b>BDL</b>	<b>BDL</b>	<b>BDL</b>	<b>BDL</b>	<b>BDL</b>	<b>BDL</b>	<b>BDL</b>
Office Building, Shubkhera, Poanta Sahib	6AM-2PM	3.6	5.2	4.7	3.1	4.7	-	6.2	7.8	7.2	5.2	4.1	4.7	3.6	4.7	3.6
		4.7	6.2	3.6	4.1	6.2	5.2	4.7	5.5	4.7	4.7	3.1	4.1	3.1	3.6	4.1
	2PM-10PM	6.2	6.2	8.3	5.7	6.7	5.7	7.8	9.3	5.2	5.7	5.2	5.2	4.7	6.7	5.7
		7.2	6.2	7.2	7.2	7.8	8.3	9.3	10.9	9.3	6.7	6.2	7.2	5.7	5.2	4.7
	10PM-6AM	3.5	4.7	3.1	4.7	5.2	7.2	7.2	11.4	7.8	4.7	3.6	4.7	4.1	3.6	3.1
		3.0	4.1	2.1	2.6	3.1	4.7	6.7	8.3	6.2	3.6	3.1	2.1	3.1	2.6	2.1
	<b>24 hour Avg.</b>	<b>4.7</b>	<b>5.4</b>	<b>4.8</b>	<b>4.6</b>	<b>5.6</b>	<b>6.2</b>	<b>7.0</b>	<b>8.8</b>	<b>6.7</b>	<b>5.1</b>	<b>4.2</b>	<b>4.7</b>	<b>4.0</b>	<b>4.4</b>	<b>3.9</b>



**ANNEXURE-II (c)**

Area and Location	Time of sampling	Pre Diwali Monitoring							Diwali Day	Post Diwali Monitoring						
		17.10.2022	18.10.2022	19.10.2022	20.10.2022	21.10.2022	22.10.2022	23.10.2022	24.10.2022	25.10.2022	26.10.2022	27.10.2022	28.10.2022	29.10.2022	30.10.2022	31.10.2022
Regional Office, Una	6AM-2PM	3.1	2.5	3.4	1.0	1.5	3.4	3.4	2.9	3.4	2.9	3.5	1.0	1.0	2.0	2.9
		2.6	2.9	1.5	1.5	-	2.6	3.9	3.9	2.9	4.4	2.8	0.5	0.5	1.5	4.4
	2PM-10PM	3.0	3.7	2.9	2.9	1.0	2.9	2.9	4.9	3.9	2.9	2.0	1.0	2.0	2.9	2.5
		2.7	3.4	1.5	3.4	1.5	3.4	2.5	3.9	2.0	3.4	2.9	0.5	1.5	2.5	3.4
	10PM-6AM	-	-	2.0	2.0	2.0	2.9	2.5	4.9	1.0	1.0	2.4	1.5	2.5	3.4	1.0
		-	-	1.0	2.9	1.0	3.9	2.9	4.4	2.5	0.5	2.7	1.0	2.0	3.9	0.5
	<b>24 hour Avg.</b>	<b>2.8</b>	<b>3.1</b>	<b>BDL</b>	<b>2.3</b>	<b>BDL</b>	<b>3.2</b>	<b>3.0</b>	<b>4.2</b>	<b>2.6</b>	<b>2.5</b>	<b>2.7</b>	<b>BDL</b>	<b>BDL</b>	<b>2.7</b>	<b>2.5</b>
Nehru Park, Manali	6AM-2PM	0.8	0.8	0.8	0.8	0.8	0.8	0.8	2.4	3.2	2.4	1.6	1.6	1.6	2.4	1.6
		2.4	2.4	2.1	1.8	2.4	4.0	2.4	3.2	3.2	3.2	2.4	2.4	2.4	3.2	2.4
	2PM-10PM	1.6	1.6	2.6	2.6	1.6	1.6	2.4	4.0	4.0	3.2	2.4	3.2	2.4	3.2	3.2
		1.6	1.6	1.6	1.6	3.4	1.6	1.6	4.8	4.0	2.4	3.2	3.2	3.2	3.2	1.6
	10PM-6AM	0.8	0.8	0.8	0.8	0.8	0.8	1.6	4.8	2.4	1.6	1.6	1.6	1.6	1.6	1.6
		1.6	1.6	1.1	0.8	0.8	0.8	1.6	4.0	2.4	1.6	1.6	1.6	1.6	1.6	1.6
	<b>24 hour Avg.</b>	<b>BDL</b>	<b>BDL</b>	<b>BDL</b>	<b>BDL</b>	<b>BDL</b>	<b>BDL</b>	<b>BDL</b>	<b>3.9</b>	<b>3.2</b>	<b>2.4</b>	<b>2.1</b>	<b>2.3</b>	<b>2.1</b>	<b>2.5</b>	<b>2.1</b>



ANNEXURE-II (d)																
RSPM(PM2.5) in ug/m <sup>3</sup>																
24 Hour Standard for Industrial, Residential & Others=60 ug/m3																
Area and Location	Time of sampling	Pre Diwali Monitoring							Diwali Day	Post Diwali Monitoring						
		17.10.2022	18.10.2022	19.10.2022	20.10.2022	21.10.2022	22.10.2022	23.10.2022	24.10.2022	25.10.2022	26.10.2022	27.10.2022	28.10.2022	29.10.2022	30.10.2022	31.10.2022
Tekka Bench, The Mall, Shimla	24 hour Avg.	15.0	9.6	14.2	15.4	19.2	20.0	14.8	16.0	14.2	9.6	10.0	10.8	11.6	12.1	9.6
Parwanoo, Sector-IV	24 hour Avg.	7.1	26.1	17.4	19.2	17.0	17.6	26.2	32.9	12.1	15.3	14.4	8.8	12.5	23.8	6.9
Dari, Dharamshala	24 hour Avg.	23.0	17.0	25.0	14.0	20.0	15.0	31.0	68.0	30.0	16.0	17.0	27.0	31.0	24.0	21.0
Ram Gopal Mandir Damtal	24 hour Avg.	29.0	18.0	30.0	16.0	18.0	17.0	34.0	66.0	25.0	24.0	27.0	24.0	29.0	22.0	29.0
Regional Office, Sunder Nagar	24 hour Avg.	24.0	31.0	21.0	27.0	22.0	23.0	21.0	28.0	23.0	28.0	23.0	29.0	26.0	26.0	21.0
Office Building, Shubkhera, Poanta Sahib	24 hour Avg.	36.5	25.1	46.0	37.7	35.6	40.6	45.9	67.0	50.3	29.4	41.8	37.6	42.9	38.1	25.1
Trilokpur, Kala Amb	24 hour Avg.	26.5	18.9	8.1	19.7	38.5	36.9	32.6	47.3	27.6	33.7	27.6	28.2	32.2	28.1	32.7
Regional Office, Una	24 hour Avg.	33.8	34.1	23.3	27.7	25.3	30.0	36.3	44.0	40.8	40.1	37.0	34.3	32.2	35.0	30.6
HIMUDA Complex, Phase-I, Baddi	24 hour Avg.	64.0	65.0	45.0	53.0	46.0	54.0	50.0	77.3	104.0	42.0	37.0	51.0	56.0	85.0	47.0
Durga Devi Temple, Nalagarh	24 hour Avg.	20.9	25.0	25.0	29.9	25.0	38.9	37.5	41.6	33.2	29.2	25.0	25.0	29.2	25.0	20.8
Hadimba Matta Road, Manali	24 hour Avg.	14.2	13.3	17.4	17.0	12.9	17.2	16.7	25.5	16.8	12.5	8.4	5.9	-	-	-

ANNEXURE-II (e)																
O <sub>3</sub> in ug/m <sup>3</sup>																
24 Hour Standard for Industrial, Residential & Others=100 ug/m <sup>3</sup>																
Area and Location	Time of sampling	Pre Diwali Monitoring							Diwali Day	Post Diwali Monitoring						
		17.10.2022	18.10.2022	19.10.2022	20.10.2022	21.10.2022	22.10.2022	23.10.2022	24.10.2022	25.10.2022	26.10.2022	27.10.2022	28.10.2022	29.10.2022	30.10.2022	31.10.2022
Tekka Bench, The Mall, Shimla	6AM-2PM	19.3	18.9	22.1	22.1	21.7	23.6	22.6	20.0	28.1	21.5	21.2	21.6	23.1	24.0	22.8
	2PM-10PM	22.3	26.4	28.7	27.2	25.8	26.1	26.3	27.9	40.0	29.1	28.5	28.8	29.3	34.3	32.9
	10PM-6AM	12.9	14.0	15.6	19.4	16.4	17.2	17.5	25.7	36.2	26.9	26.7	26.8	27.0	22.3	20.3
	<b>24 hour Avg.</b>	<b>18.2</b>	<b>19.8</b>	<b>22.1</b>	<b>22.9</b>	<b>21.3</b>	<b>22.3</b>	<b>22.1</b>	<b>24.5</b>	<b>34.8</b>	<b>25.8</b>	<b>25.5</b>	<b>25.7</b>	<b>26.5</b>	<b>26.9</b>	<b>25.3</b>
Parwanoo, Sector-IV	6AM-2PM	0.8	1.4	4.8	1.7	1.6	4.8	2.3	1.5	1.5	0.9	0.6	2.3	1.8	1.4	2.0
	2PM-10PM	0.5	1.2	1.6	1.8	1.8	3.7	1.8	2.7	1.7	0.8	1.8	2.8	2.7	1.2	1.6
	10PM-6AM	0.5	0.9	3.7	10.2	1.5	1.8	6.9	6.9	1.4	1.9	7.6	1.8	2.3	1.8	2.8
	<b>24 hour Avg.</b>	<b>0.6</b>	<b>1.2</b>	<b>3.4</b>	<b>4.6</b>	<b>1.6</b>	<b>3.4</b>	<b>3.7</b>	<b>3.7</b>	<b>1.5</b>	<b>1.2</b>	<b>3.5</b>	<b>2.3</b>	<b>2.3</b>	<b>1.5</b>	<b>2.1</b>
Dari, Dharamshala	6AM-2PM	1.0	1.1	1.4	0.9	1.4	1.0	1.2	1.4	1.2	1.0	1.2	0.9	0.9	1.1	0.9
	2PM-10PM	1.3	1.5	2.1	1.2	1.7	1.5	1.6	2.4	1.7	1.6	1.5	1.7	1.6	1.8	1.3
	10PM-6AM	0.8	0.9	0.9	0.9	1.0	0.9	1.0	1.7	1.5	1.2	1.1	1.1	1.2	1.3	1.1
	<b>24 hour Avg.</b>	<b>1.0</b>	<b>1.2</b>	<b>4.5</b>	<b>1.0</b>	<b>1.4</b>	<b>1.1</b>	<b>1.3</b>	<b>1.9</b>	<b>1.5</b>	<b>1.3</b>	<b>1.3</b>	<b>1.3</b>	<b>1.2</b>	<b>1.4</b>	<b>1.1</b>
Ram Gopal Mandir Damtal	6AM-2PM	1.4	0.6	1.1	1.1	0.9	1.1	0.9	1.3	1.2	1.0	1.0	0.9	1.1	1.0	1.0
	2PM-10PM	1.7	1.4	1.4	1.7	1.3	1.9	1.8	1.7	1.5	1.6	1.8	1.8	1.8	1.9	1.9
	10PM-6AM	0.7	1.1	0.9	0.9	1.1	1.1	1.4	1.4	1.3	1.2	1.3	1.1	1.2	1.5	1.3
	<b>24 hour Avg.</b>	<b>1.3</b>	<b>1.1</b>	<b>1.2</b>	<b>1.2</b>	<b>1.1</b>	<b>1.4</b>	<b>1.4</b>	<b>1.5</b>	<b>1.3</b>	<b>1.3</b>	<b>1.4</b>	<b>1.2</b>	<b>1.4</b>	<b>1.5</b>	<b>1.4</b>
Rgional Office, Sunder Nagar	6AM-2PM	2.4	2.5	2.3	2.3	2.4	2.5	2.4	2.7	2.5	2.4	2.4	2.3	2.5	2.4	2.4
	2PM-10PM	2.7	3.0	2.7	2.4	2.7	2.7	2.7	3.0	2.7	2.7	2.7	2.7	3.0	2.7	2.5
	10PM-6AM	2.4	2.3	2.7	2.0	2.3	2.4	2.5	2.5	2.3	2.5	2.3	2.5	2.4	2.5	2.2
	<b>24 hour Avg.</b>	<b>2.5</b>	<b>2.6</b>	<b>2.6</b>	<b>2.2</b>	<b>2.5</b>	<b>2.5</b>	<b>2.5</b>	<b>2.7</b>	<b>2.5</b>	<b>2.5</b>	<b>2.5</b>	<b>2.5</b>	<b>2.5</b>	<b>2.6</b>	<b>2.5</b>

## ANNEXURE-II (e)

Area and Location	Time of sampling	Pre Diwali Monitoring							Diwali Day	Post Diwali Monitoring						
		17.10.2022	18.10.2022	19.10.2022	20.10.2022	21.10.2022	22.10.2022	23.10.2022	24.10.2022	25.10.2022	26.10.2022	27.10.2022	28.10.2022	29.10.2022	30.10.2022	31.10.2022
Office Building, Shubkhera, Poanta Sahib	6AM-2PM	1.5	1.9	1.4	2.8	3.8	3.5	4.0	5.4	4.5	3.7	5.0	3.5	4.0	3.3	4.1
	2PM-10PM	2.5	1.7	2.8	3.2	4.5	4.8	4.4	3.7	4.8	4.4	4.3	5.2	4.2	4.4	4.6
	10PM-6AM	1.2	2.2	2.2	1.9	2.6	4.3	4.9	5.1	4.1	3.3	2.5	4.0	3.4	4.8	3.4
	<b>24 hour Avg.</b>	<b>1.8</b>	<b>1.9</b>	<b>2.1</b>	<b>2.6</b>	<b>3.6</b>	<b>4.2</b>	<b>4.4</b>	<b>4.8</b>	<b>4.5</b>	<b>3.8</b>	<b>3.9</b>	<b>4.2</b>	<b>3.8</b>	<b>4.2</b>	<b>4.0</b>
Trilokpur, Kala Amb	6AM-2PM	2.0	2.8	1.6	2.2	2.8	3.3	4.3	4.8	4.0	4.9	4.7	4.8	3.4	3.8	4.4
	2PM-10PM	2.6	3.2	3.0	3.7	3.8	4.4	3.9	4.1	4.2	6.2	4.3	4.1	3.2	4.3	3.9
	10PM-6AM	1.3	1.8	1.9	1.7	2.9	4.1	4.4	4.6	3.8	5.1	2.1	3.2	2.9	2.9	3.3
	<b>24 hour Avg.</b>	<b>2.0</b>	<b>2.6</b>	<b>2.2</b>	<b>2.5</b>	<b>3.2</b>	<b>3.9</b>	<b>4.2</b>	<b>4.5</b>	<b>4.0</b>	<b>5.4</b>	<b>3.7</b>	<b>4.0</b>	<b>3.2</b>	<b>3.7</b>	<b>3.9</b>
HIMUDA Complex, Phase-I, Baddi	6AM-2PM	70.2	62.8	89.9	94.3	79.3	106.0	80.1	79.2	47.2	58.1	75.6	86.1	83.7	68.7	92.0
	2PM-10PM	138.2	145.0	147.3	133.4	134.2	144.9	123.6	120.3	113.1	122.2	119.3	139.0	133.8	139.8	131.7
	10PM-6AM	84.6	112.7	131.3	105.3	154.5	103.3	116.4	77.6	103.7	112.0	109.8	111.6	121.5	122.7	119.8
	<b>24 hour Avg.</b>	<b>97.7</b>	<b>106.9</b>	<b>122.9</b>	<b>111.0</b>	<b>122.7</b>	<b>118.1</b>	<b>106.7</b>	<b>92.4</b>	<b>88.0</b>	<b>97.4</b>	<b>101.5</b>	<b>112.2</b>	<b>113.0</b>	<b>110.4</b>	<b>114.5</b>

## ANNEXURE-II (f)

CO in mg/m<sup>3</sup>24 Hour Standard for Industrial, Residential & Others=02 mg/m<sup>3</sup>

Area and Location	Time of sampling	Pre Diwali Monitoring							Diwali Day	Post Diwali Monitoring						
		17.10.2022	18.10.2022	19.10.2022	20.10.2022	21.10.2022	22.10.2022	23.10.2022	24.10.2022	25.10.2022	26.10.2022	27.10.2022	28.10.2022	29.10.2022	30.10.2022	31.10.2022
HIMUDA Complex, Phase I, Baddi	6AM-2PM	0.52	0.66	0.41	0.42	0.34	0.38	0.41	0.34	0.46	0.48	0.31	0.39	0.37	0.65	0.43
	2PM-10PM	0.50	0.62	0.48	0.49	0.47	0.48	0.48	0.34	0.38	0.42	0.44	0.58	0.45	0.64	0.53
	10PM-6AM	1.01	0.73	0.54	0.44	0.74	0.66	0.48	0.52	0.53	0.47	0.51	0.88	0.60	0.81	0.59
	24 hour Avg.	0.68	0.67	0.48	0.45	0.52	0.51	0.46	0.40	0.46	0.46	0.42	0.62	0.47	0.70	0.52

ANNEXURE-II (g)																
NH <sub>3</sub> in ug/m <sup>3</sup>																
24 Hour Standard for Industrial, Residential & Others=400 ug/m <sup>3</sup>																
Area and Location	Time of sampling	Pre Diwali Monitoring							Diwali Day	Post Diwali Monitoring						
		17.10.2022	18.10.2022	19.10.2022	20.10.2022	21.10.2022	22.10.2022	23.10.2022	24.10.2022	25.10.2022	26.10.2022	27.10.2022	28.10.2022	29.10.2022	30.10.2022	31.10.2022
Tekka Bench, The Mall, Shimla	6AM-2PM	2.30	5.10	1.60	1.50	1.40	1.50	1.60	1.40	2.50	2.20	2.00	2.20	2.40	2.80	2.20
		3.10	7.20	2.00	1.80	1.90	2.00	1.80	2.80	3.70	3.10	3.00	3.10	3.20	4.10	3.10
	2PM-10PM	3.50	7.70	2.40	2.20	2.10	2.50	2.60	4.80	3.80	3.50	3.30	3.30	3.30	4.50	3.50
		3.20	6.10	2.80	2.70	2.40	2.70	2.80	5.10	3.50	3.10	3.00	3.00	3.30	3.40	2.90
	10PM-6AM	2.40	3.50	1.50	1.40	1.50	1.40	1.50	5.70	3.20	2.10	2.00	2.10	2.10	2.70	2.30
		1.70	2.70	0.60	0.70	0.70	0.80	0.90	2.40	1.80	1.30	1.20	1.20	1.30	1.60	1.10
<b>24 hour Avg.</b>		<b>2.70</b>	<b>5.38</b>	<b>1.82</b>	<b>1.72</b>	<b>1.67</b>	<b>1.82</b>	<b>1.87</b>	<b>3.70</b>	<b>3.08</b>	<b>2.55</b>	<b>2.42</b>	<b>2.48</b>	<b>2.60</b>	<b>3.18</b>	<b>2.52</b>
Sector-4- Residential Parwanoo	6AM-2PM	0.10	0.09	0.21	0.14	1.33	0.14	0.10	0.14	0.10	0.13	0.08	0.13	0.10	0.21	0.18
		0.13	-	0.18	0.22	1.55	0.17	0.13	0.18	0.13	0.10	0.10	0.11	0.16	0.17	0.13
	2PM-10PM	0.16	-	0.14	0.17	0.10	0.18	0.16	0.17	0.11	0.14	0.11	0.10	0.11	0.14	0.11
		0.11	0.16	0.17	0.18	0.14	0.21	0.22	0.21	0.10	0.16	0.10	0.16	0.18	0.16	0.10
	10PM-6AM	0.10	0.14	0.16	0.11	0.10	0.13	0.25	0.27	0.10	0.11	0.14	0.10	0.10	0.14	0.10
		0.11	0.16	0.13	0.10	0.10	0.11	0.22	0.19	0.08	0.14	0.13	0.08	0.08	0.11	0.08
<b>24 hour Avg.</b>		<b>0.12</b>	<b>0.14</b>	<b>0.16</b>	<b>0.15</b>	<b>0.55</b>	<b>0.16</b>	<b>0.18</b>	<b>0.20</b>	<b>0.11</b>	<b>0.13</b>	<b>0.11</b>	<b>0.11</b>	<b>0.12</b>	<b>0.16</b>	<b>0.12</b>
Dari, Dharamshala	6AM-2PM	0.15	0.18	0.26	0.19	0.28	0.18	0.26	0.33	0.27	0.22	0.24	0.19	0.18	0.23	0.27
	2PM-10PM	0.31	0.29	0.38	0.23	0.32	0.31	0.32	0.51	0.38	0.32	0.35	0.31	0.28	0.46	0.35
	10PM-6AM	0.22	0.24	0.20	0.22	0.17	0.23	0.19	0.36	0.28	0.24	<b>0.27</b>	<b>0.24</b>	<b>0.22</b>	<b>0.27</b>	<b>0.24</b>
	<b>24 hour Avg.</b>	<b>0.23</b>	<b>0.24</b>	<b>0.28</b>	<b>0.21</b>	<b>0.26</b>	<b>0.24</b>	<b>0.26</b>	<b>0.40</b>	<b>0.31</b>	<b>0.26</b>	<b>0.29</b>	<b>0.25</b>	<b>0.23</b>	<b>0.32</b>	<b>0.29</b>

ANNEXURE-II (g)																
Area and Location	Time of sampling	Pre Diwali Monitoring							Diwali Day	Post Diwali Monitoring						
		17.10.2022	18.10.2022	19.10.2022	20.10.2022	21.10.2022	22.10.2022	23.10.2022	24.10.2022	25.10.2022	26.10.2022	27.10.2022	28.10.2022	29.10.2022	30.10.2022	31.10.2022
Ram Gopal Mandir Damtal	6AM-2PM	0.32	0.22	0.18	0.25	0.61	0.32	0.31	0.35	0.28	0.23	0.23	0.23	0.26	0.23	0.26
	2PM-10PM	0.59	0.45	0.45	0.38	0.45	0.57	0.45	0.44	0.40	0.41	0.42	0.40	0.40	0.44	0.46
	10PM-6AM	0.38	0.13	0.13	0.22	0.19	0.38	0.36	0.27	0.26	0.31	0.33	0.27	0.28	0.36	0.22
	<b>24 hour Avg.</b>	<b>0.43</b>	<b>0.27</b>	<b>0.25</b>	<b>0.28</b>	<b>0.42</b>	<b>0.42</b>	<b>0.37</b>	<b>0.35</b>	<b>0.31</b>	<b>0.32</b>	<b>0.33</b>	<b>0.30</b>	<b>0.31</b>	<b>0.34</b>	<b>0.31</b>
Regional Office, Sunder Nagar	6AM-2PM	4.20	4.81	4.50	3.60	3.90	4.81	4.50	4.81	4.20	4.81	4.50	3.90	4.81	5.11	5.11
		5.11	5.41	5.11	4.81	4.81	5.41	5.41	5.71	5.41	5.71	5.41	4.50	5.71	6.31	6.00
	2PM-10PM	5.71	6.00	5.71	4.20	5.71	6.00	6.00	6.31	5.71	6.00	5.71	5.71	6.00	6.00	5.71
		6.31	6.61	6.31	5.71	6.61	6.61	6.61	6.61	6.31	6.61	6.31	6.31	6.31	6.61	6.61
	10PM-6AM	5.41	5.11	5.41	6.31	5.41	5.71	5.71	6.00	5.11	5.41	5.41	5.11	5.41	4.81	5.41
		4.81	5.71	4.81	5.11	5.11	5.11	5.11	5.41	4.81	4.50	4.81	4.81	4.50	5.11	4.50
	<b>24 hour Avg.</b>	<b>5.26</b>	<b>5.61</b>	<b>5.31</b>	<b>4.96</b>	<b>5.26</b>	<b>5.61</b>	<b>5.56</b>	<b>5.81</b>	<b>5.25</b>	<b>5.50</b>	<b>5.36</b>	<b>5.06</b>	<b>5.51</b>	<b>5.66</b>	<b>5.56</b>
Office Building, Shubkhera, Poanta Sahib	6AM-2PM	1.10	1.20	1.10	1.10	1.00	1.10	1.50	2.60	2.00	1.60	1.30	1.10	1.30	1.10	0.90
		1.10	1.20	1.10	1.10	1.00	1.10	1.50	2.60	2.00	1.60	1.30	1.10	1.30	1.10	0.90
	2PM-10PM	1.44	1.20	1.60	1.30	1.20	1.40	1.50	2.00	1.60	1.40	1.20	1.60	1.50	1.60	1.50
		1.44	1.20	1.60	1.30	1.20	1.40	1.50	2.00	1.60	1.40	1.20	1.60	1.50	1.60	1.50
	10PM-6AM	0.87	0.80	1.00	1.00	1.00	1.56	1.90	2.50	1.80	1.00	1.10	1.00	1.00	1.20	0.90
		0.87	0.80	1.00	1.00	1.00	1.60	1.90	2.50	1.80	1.00	1.10	1.00	1.00	1.20	0.90
	<b>24 hour Avg.</b>	<b>1.14</b>	<b>1.07</b>	<b>1.23</b>	<b>1.13</b>	<b>1.07</b>	<b>1.36</b>	<b>1.63</b>	<b>2.37</b>	<b>1.80</b>	<b>1.33</b>	<b>1.20</b>	<b>1.23</b>	<b>1.27</b>	<b>1.30</b>	<b>1.10</b>
Trilokpur, Kala Amb	6AM-2PM	0.90	1.20	1.10	1.10	1.10	1.40	1.50	1.79	1.90	1.50	1.10	1.30	0.90	1.00	1.10
		0.90	1.20	1.10	1.10	1.10	1.40	1.50	1.79	1.90	1.50	1.10	1.30	0.90	1.00	1.10
	2PM-10PM	1.30	1.20	1.20	1.50	1.60	1.50	1.80	2.03	1.90	1.30	1.20	1.50	1.10	1.40	1.50
		1.30	1.20	1.20	1.50	1.60	1.50	1.80	2.03	1.40	1.30	1.20	1.50	1.10	1.40	1.50
	10PM-6AM	0.90	1.00	0.90	1.00	0.90	1.10	1.20	2.34	1.50	1.10	1.10	1.10	1.00	1.10	1.10
		0.90	1.00	0.90	1.00	0.90	1.10	1.20	2.34	1.50	1.10	1.10	1.10	1.00	1.10	1.10
	<b>24 hour Avg.</b>	<b>1.03</b>	<b>1.13</b>	<b>1.07</b>	<b>1.20</b>	<b>1.20</b>	<b>1.33</b>	<b>1.50</b>	<b>2.05</b>	<b>1.68</b>	<b>1.30</b>	<b>1.13</b>	<b>1.30</b>	<b>1.00</b>	<b>1.17</b>	<b>1.23</b>

**ANNEXURE-II (g)**

Area and Location	Time of sampling	Pre Diwali Monitoring							Diwali Day	Post Diwali Monitoring						
		17.10.2022	18.10.2022	19.10.2022	20.10.2022	21.10.2022	22.10.2022	23.10.2022	24.10.2022	25.10.2022	26.10.2022	27.10.2022	28.10.2022	29.10.2022	30.10.2022	31.10.2022
<b>HIMUDA Complex, Phase-I, Baddi</b>	6AM-2PM	3.10	4.48	2.52	2.28	6.39	13.71	12.39	11.52	16.01	14.89	9.22	10.46	12.16	16.47	12.24
		2.65	3.01	1.62	1.92	7.45	10.59	11.55	10.29	17.22	12.53	8.82	9.41	11.61	18.14	11.10
	2PM-10PM	2.13	3.24	0.67	14.92	8.07	11.30	12.73	11.17	18.58	12.09	11.12	12.56	10.98	15.81	11.92
		4.06	2.91	2.37	11.65	13.49	13.54	11.34	10.75	14.86	12.34	10.14	15.22	13.23	16.93	10.49
	10PM-6AM	3.96	1.49	1.17	12.76	21.57	14.41	13.81	10.38	14.74	14.17	13.29	18.96	14.98	21.83	11.13
		0.72	1.81	1.94	6.40	20.97	15.29	11.68	14.54	13.46	12.01	12.99	16.65	14.31	17.26	9.89
	<b>24 hour Avg.</b>	<b>2.77</b>	<b>2.82</b>	<b>1.72</b>	<b>8.32</b>	<b>12.99</b>	<b>13.14</b>	<b>12.25</b>	<b>11.44</b>	<b>15.81</b>	<b>13.01</b>	<b>10.93</b>	<b>13.88</b>	<b>12.88</b>	<b>17.74</b>	<b>11.13</b>
<b>Hadimba Matta Road, Manali</b>	6AM-2PM	1.86	1.86	2.07	1.99	1.90	3.05	1.85	2.40	2.60	2.22	2.12	1.95	1.99	2.00	1.93
	2PM-10PM	2.58	2.58	2.64	2.67	3.36	2.59	2.60	4.03	3.24	2.60	2.54	2.66	2.57	2.68	2.37
	10PM-6AM	1.99	2.00	1.77	2.95	1.94	1.96	1.99	3.85	2.90	2.15	2.01	1.87	1.72	1.95	1.74
	<b>24 hour Avg.</b>	<b>2.14</b>	<b>2.15</b>	<b>2.16</b>	<b>2.20</b>	<b>2.40</b>	<b>2.53</b>	<b>2.15</b>	<b>3.43</b>	<b>2.91</b>	<b>2.32</b>	<b>2.22</b>	<b>2.16</b>	<b>2.09</b>	<b>2.21</b>	<b>2.01</b>

Date	Ridge, Shimla												Date	Parwanoo, Sector-IV												
	Regulatory Parameters						Metals in PM10			Proposed New Parameters				Regulatory Parameters						Proposed New Parameters						
	SO2 (ug/m3)	NOx (ug/m3)	PM10 (ug/m3)	PM 2.5 (ug/m3)	O3 ug/m3	NH3 ug/m3	Pb (ug/m3)	Ni (ug/m3)	As (ug/m3)	Metals/Elements in PM 2.5				SO2 (ug/m3)	NOx (ug/m3)	PM10 (ug/m3)	PM 2.5 (ug/m3)	O3 ug/m3	NH3 ug/m3	Metals in PM10			Metals/Elements in PM 2.5			
										Al	Fe	Ba								Al	Fe	Ba				
										In ug/m3													In ug/m3			
									Al	Fe	Ba										Al	Fe	Ba			
17.10.2022	BDL	BDL	18.5	15.0	18.2	2.70	ND	ND	ND	ND	0.925	51.25	17.10.2022	BDL	BDL	27.7	7.1	0.6	0.12	ND	ND	ND	ND	ND	ND	6.66
18.10.2022	BDL	11.4	20.4	9.6	19.8	5.38	ND	ND	ND	ND	ND	25.79	18.10.2022	BDL	BDL	37.1	26.1	1.2	0.14	ND	ND	ND	ND	ND	ND	1.26
19.10.2022	BDL	BDL	30.9	14.2	22.1	1.82	ND	ND	ND	ND	0.85	2.63	19.10.2022	BDL	BDL	37.0	17.4	3.4	0.16	ND	ND	ND	ND	ND	ND	0.66
20.10.2022	BDL	BDL	31.3	15.4	22.9	1.72	ND	ND	ND	ND	1.491	14.63	20.10.2022	BDL	10.5	35.9	19.2	4.6	0.15	ND	ND	ND	ND	ND	ND	ND
21.10.2022	BDL	BDL	35.3	19.2	21.3	1.67	ND	ND	ND	ND	0.992	6.46	21.10.2022	BDL	BDL	40.4	17.0	1.6	0.55	ND	ND	ND	ND	ND	ND	0.21
22.10.2022	BDL	BDL	39.3	20.0	22.3	1.82	ND	ND	ND	ND	0.578	ND	22.10.2022	BDL	BDL	49.8	17.6	3.4	0.16	ND	ND	ND	ND	ND	ND	ND
23.10.2022	BDL	9.2	25.4	14.8	22.1	1.87	ND	ND	ND	ND	2.933	16.63	23.10.2022	2.3	9.6	45.2	26.2	3.7	0.18	ND	ND	ND	ND	ND	ND	0.62
24.10.2022	2.8	37.8	31.0	16.0	24.5	3.70	ND	ND	ND	ND	2.283	ND	24.10.2022	3.1	12.0	82.9	32.9	3.7	0.20	ND	ND	ND	ND	ND	ND	0.17
25.10.2022	2.2	11.3	27.0	14.2	34.8	3.08	ND	ND	ND	ND	0.783	ND	25.10.2022	BDL	9.6	34.2	12.1	1.5	0.11	ND	ND	ND	ND	ND	ND	ND
26.10.2022	BDL	9.8	21.5	9.6	25.8	2.55	ND	ND	ND	ND	1.991	ND	26.10.2022	2.2	BDL	32.3	15.3	1.2	0.13	ND	ND	ND	ND	ND	ND	ND
27.10.2022	BDL	9.1	21.8	10.0	25.5	2.42	ND	ND	ND	ND	5.592	ND	27.10.2022	2.1	BDL	36.4	14.4	3.5	0.11	ND	ND	ND	ND	ND	ND	ND
28.10.2022	BDL	9.7	23.6	10.8	25.7	2.48	ND	ND	ND	ND	1.708	ND	28.10.2022	2.5	BDL	45.5	8.8	2.3	0.11	ND	ND	ND	ND	ND	ND	ND
29.10.2022	BDL	10.3	35.5	11.6	26.5	2.60	ND	ND	ND	ND	0.877	ND	29.10.2022	2.1	BDL	35.1	12.5	2.3	0.12	ND	ND	ND	ND	ND	ND	ND
30.10.2022	BDL	10.5	26.1	12.1	26.9	3.18	ND	ND	ND	ND	1.416	ND	30.10.2022	BDL	BDL	64.4	23.8	1.5	0.16	ND	ND	ND	ND	ND	ND	0.08
31.10.2022	BDL	9.8	23.4	9.6	25.3	2.52	ND	ND	ND	ND	1.066	ND	31.10.2022	BDL	BDL	25.0	6.9	2.1	0.12	ND	ND	ND	ND	ND	ND	6.70



## ANNEXURE-III

Date	Residential Building Dari Dharamshala (795)												Date	Ram Gopal Mandir, Danttal											
	Regulatory Parameters						Metals in PM10			Proposed New Parameters				Regulatory Parameters						Metals in PM10			Proposed New Parameters		
	SO <sub>2</sub> (ug/m <sup>3</sup> )	NO <sub>x</sub> (ug/m <sup>3</sup> )	PM10 (ug/m <sup>3</sup> )	PM 2.5 (ug/m <sup>3</sup> )	O <sub>3</sub> ug/m <sup>3</sup>	NH <sub>3</sub> ug/m <sup>3</sup>	Pb (ug/m <sup>3</sup> )	Ni (ug/m <sup>3</sup> )	As (ug/m <sup>3</sup> )	Metals/Elements in PM 2.5				SO <sub>2</sub> (ug/m <sup>3</sup> )	NO <sub>x</sub> (ug/m <sup>3</sup> )	PM10 (ug/m <sup>3</sup> )	PM 2.5 (ug/m <sup>3</sup> )	O <sub>3</sub> ug/m <sup>3</sup>	NH <sub>3</sub> ug/m <sup>3</sup>	Pb (ug/m <sup>3</sup> )	Ni (ug/m <sup>3</sup> )	As (ug/m <sup>3</sup> )	Metals/Elements in PM 2.5		
										Al	Fe	Ba											Al	Fe	Ba
	In ug/m <sup>3</sup>									In ug/m <sup>3</sup>															
17.10.2022	BDL	BDL	48.0	23.0	1.0	0.23	ND	ND	ND	ND	ND	ND	17.10.2022	BDL	BDL	51.0	29.0	1.3	0.43	ND	ND	ND	ND	ND	ND
18.10.2022	BDL	BDL	31.7	17.0	1.2	0.24	ND	ND	ND	ND	ND	ND	18.10.2022	BDL	BDL	37.0	18.0	1.1	0.27	ND	ND	ND	ND	ND	ND
19.10.2022	BDL	BDL	58.3	25.0	4.5	0.28	ND	ND	ND	ND	ND	ND	19.10.2022	BDL	BDL	71.3	30.0	1.2	0.25	ND	ND	ND	ND	ND	ND
20.10.2022	BDL	BDL	34.0	14.0	1.0	0.21	ND	ND	ND	ND	ND	ND	20.10.2022	BDL	BDL	40.0	16.0	1.2	0.28	ND	ND	ND	ND	ND	ND
21.10.2022	BDL	BDL	42.0	20.0	1.4	0.26	ND	ND	ND	ND	ND	ND	21.10.2022	BDL	BDL	44.0	18.0	1.1	0.42	ND	ND	ND	ND	ND	ND
22.10.2022	BDL	BDL	36.0	15.0	1.1	0.24	ND	ND	ND	ND	ND	ND	22.10.2022	BDL	BDL	40.0	17.0	1.4	0.42	ND	ND	ND	ND	ND	ND
23.10.2022	BDL	BDL	36.3	31.0	1.3	0.26	ND	ND	ND	ND	ND	ND	23.10.2022	BDL	BDL	42.0	34.0	1.4	0.37	ND	ND	ND	ND	ND	ND
24.10.2022	BDL	BDL	108.0	68.0	1.9	0.40	ND	ND	ND	ND	ND	0.81	24.10.2022	BDL	BDL	103.0	66.0	1.5	0.35	ND	ND	ND	ND	ND	ND
25.10.2022	BDL	BDL	45.0	30.0	1.5	0.31	ND	ND	ND	ND	ND	ND	25.10.2022	BDL	BDL	49.0	25.0	1.3	0.31	ND	ND	ND	ND	ND	ND
26.10.2022	BDL	BDL	30.0	16.0	1.3	0.26	ND	ND	ND	ND	ND	ND	26.10.2022	BDL	BDL	51.0	24.0	1.3	0.32	ND	ND	ND	ND	ND	ND
27.10.2022	BDL	BDL	41.0	17.0	1.3	0.29	ND	ND	ND	ND	ND	ND	27.10.2022	BDL	BDL	58.0	27.0	1.4	0.33	ND	ND	ND	ND	ND	ND
28.10.2022	BDL	BDL	51.0	27.0	1.3	0.25	ND	ND	ND	ND	ND	ND	28.10.2022	BDL	BDL	49.0	24.0	1.2	0.30	ND	ND	ND	ND	ND	ND
29.10.2022	BDL	BDL	55.0	31.0	1.2	0.23	ND	ND	ND	ND	ND	4.88	29.10.2022	BDL	BDL	52.0	29.0	1.4	0.31	ND	ND	ND	ND	ND	ND
30.10.2022	BDL	BDL	53.0	24.0	1.4	0.32	ND	ND	ND	ND	ND	ND	30.10.2022	BDL	BDL	51.0	22.0	1.5	0.34	ND	ND	ND	ND	ND	ND
31.10.2022	BDL	BDL	46.0	21.0	1.1	0.29	ND	ND	ND	ND	ND	ND	31.10.2022	BDL	BDL	64.0	29.0	1.4	0.31	ND	ND	ND	ND	ND	ND

ANNEXURE-III																										
Date	Regional Office, Sunder Nagar												Date	Office Building, Shubkhara, Poanta Sahib												
	Regulatory Parameters						Metals in PM10			Proposed New Parameters				Regulatory Parameters						Metals in PM10			Proposed New Parameters			
	SO2 (ug/m3)	NOx (ug/m3)	PM10 (ug/m3)	PM 2.5 (ug/m3)	O3 ug/m3	NH3 ug/m3	Pb (ug/m3)	Ni (ug/m3)	As (ug/m3)	Metals/Elements in PM 2.5				SO2 (ug/m3)	NOx (ug/m3)	PM10 (ug/m3)	PM 2.5 (ug/m3)	O3 ug/m3	NH3 ug/m3	Pb (ug/m3)	Ni (ug/m3)	As (ug/m3)	Metals/Elements in PM 2.5			
										In ug/m3													In ug/m3			
				Al	Fe	Ba				Al	Fe	Ba														
17.10.2022	BDL	BDL	50.0	24.0	2.5	5.26	ND	ND	ND	ND	ND	ND	17.10.2022	4.7	13.5	61.7	36.5	1.8	1.14	ND	ND	ND	ND	ND	ND	
18.10.2022	BDL	BDL	63.0	31.0	2.6	5.61	ND	ND	ND	ND	ND	ND	18.10.2022	5.4	14.3	63.0	25.1	1.9	1.07	ND	ND	ND	ND	0.24	0.29	
19.10.2022	BDL	BDL	42.0	21.0	2.6	5.31	ND	ND	ND	ND	ND	ND	19.10.2022	4.8	13.9	119.3	46.0	2.1	1.23	ND	ND	ND	ND	0.10	ND	
20.10.2022	BDL	BDL	57.0	27.0	2.2	4.96	ND	ND	ND	ND	ND	ND	20.10.2022	4.6	13.6	97.8	37.7	2.6	1.13	ND	ND	ND	ND	0.03	2.21	
21.10.2022	BDL	BDL	46.0	22.0	2.5	5.26	ND	ND	ND	ND	ND	ND	21.10.2022	5.6	15.3	104.7	35.6	3.6	1.07	ND	ND	ND	ND	0.38	ND	
22.10.2022	BDL	BDL	49.0	23.0	2.5	5.61	ND	ND	ND	ND	ND	ND	22.10.2022	6.2	16.1	76.5	40.6	4.2	1.36	ND	ND	ND	ND	ND	ND	
23.10.2022	BDL	BDL	45.0	21.0	2.5	5.56	ND	ND	ND	ND	ND	ND	23.10.2022	7.0	17.0	72.5	45.9	4.4	1.63	ND	ND	ND	0.32	1.29	ND	
24.10.2022	BDL	BDL	57.0	28.0	2.7	5.81	ND	ND	ND	ND	ND	ND	24.10.2022	8.8	20.2	119.6	67.0	4.8	2.37	ND	ND	ND	15.24	2.08	14.22	
25.10.2022	BDL	BDL	48.0	23.0	2.5	5.25	ND	ND	ND	ND	ND	ND	25.10.2022	6.7	16.9	107.4	50.3	4.5	1.80	0.05	0.02	ND	17.02	0.69	0.34	
26.10.2022	BDL	BDL	58.0	28.0	2.5	5.50	ND	ND	ND	ND	ND	ND	26.10.2022	5.1	14.2	79.7	29.4	3.8	1.33	ND	ND	ND	ND	0.24	0.80	
27.10.2022	BDL	BDL	48.0	23.0	2.5	5.36	ND	ND	ND	ND	ND	ND	27.10.2022	4.2	13.9	84.6	41.8	3.9	1.20	ND	ND	ND	ND	ND	ND	
28.10.2022	BDL	BDL	58.0	29.0	2.5	5.06	ND	ND	ND	ND	ND	ND	28.10.2022	4.7	14.3	65.6	37.6	4.2	1.23	ND	ND	ND	ND	ND	0.58	
29.10.2022	BDL	BDL	50.0	26.0	2.6	5.51	ND	ND	ND	ND	ND	ND	29.10.2022	4.0	13.9	103.7	42.9	3.8	1.27	ND	ND	ND	ND	0.55	1.58	
30.10.2022	BDL	BDL	55.0	26.0	2.5	5.66	ND	ND	ND	ND	ND	ND	30.10.2022	4.4	14.3	62.2	38.1	4.2	1.30	ND	ND	ND	ND	ND	ND	
31.10.2022	BDL	BDL	44.0	21.0	2.4	5.56	ND	ND	ND	ND	ND	ND	31.10.2022	3.9	12.9	74.9	25.1	4.0	1.10	ND	ND	ND	ND	0.36	0.25	

## ANNEXURE-III

Date	Trilokpur, Kala Amb											Date	Regional Office, Una				Housing Board, Baddi						
	Regulatory Parameters						Metals in PM10			Proposed New Parameters			Regulatory Parameters				Regulatory Parameters						
	SO <sub>2</sub> (ug/m <sup>3</sup> )	NO <sub>x</sub> (ug/m <sup>3</sup> )	PM10 (ug/m <sup>3</sup> )	PM 2.5 (ug/m <sup>3</sup> )	O <sub>3</sub> ug/m <sup>3</sup>	NH <sub>3</sub> ug/m <sup>3</sup>	Metals/Elements in PM 2.5			In ug/m <sup>3</sup>			SO <sub>2</sub> (ug/m <sup>3</sup> )	NO <sub>x</sub> (ug/m <sup>3</sup> )	PM10 (ug/m <sup>3</sup> )	PM 2.5 (ug/m <sup>3</sup> )	SO <sub>2</sub> (ug/m <sup>3</sup> )	NO <sub>x</sub> (ug/m <sup>3</sup> )	PM10 (ug/m <sup>3</sup> )	PM 2.5 (ug/m <sup>3</sup> )	CO mg/m <sup>3</sup>	NH <sub>3</sub> ug/m <sup>3</sup>	
							Pb (ug/m <sup>3</sup> )	Ni (ug/m <sup>3</sup> )	As (ug/m <sup>3</sup> )	Al	Fe												Ba
17.10.2022	4.6	11.3	52.9	26.5	2.0	1.03	ND	ND	ND	ND	ND	4.62	17.10.2022	2.8	BDL	55.7	33.8	24.8	26.6	164.9	64.0	0.7	2.77
18.10.2022	5.1	15.0	30.8	18.9	2.6	1.13	ND	ND	ND	ND	0.20	ND	18.10.2022	3.1	BDL	60.4	34.1	48.0	22.4	156.0	65.0	0.7	2.82
19.10.2022	3.9	13.5	21.8	8.1	2.2	1.07	ND	ND	ND	ND	0.09	ND	19.10.2022	BDL	BDL	60.3	23.3	17.3	15.2	103.9	45.0	0.5	1.72
20.10.2022	4.7	14.5	29.1	19.7	2.5	1.20	ND	ND	ND	ND	0.45	ND	20.10.2022	2.3	BDL	58.2	27.7	30.2	13.6	130.4	53.0	0.5	8.32
21.10.2022	5.3	14.9	80.2	38.5	3.2	1.20	ND	ND	ND	ND	ND	ND	21.10.2022	BDL	BDL	54.0	25.3	27.9	15.5	126.6	46.0	0.5	12.99
22.10.2022	5.7	15.9	71.4	36.9	3.9	1.33	ND	ND	ND	ND	0.52	5.34	22.10.2022	3.2	10.7	67.6	30.0	21.5	13.1	136.1	54.0	0.5	13.14
23.10.2022	6.5	16.5	64.6	32.6	4.2	1.50	ND	ND	ND	ND	1.23	ND	23.10.2022	3.0	10.3	76.9	36.3	19.0	11.4	111.3	50.0	0.5	12.25
24.10.2022	7.3	17.1	88.0	47.3	4.5	2.05	0.09	ND	ND	1.35	2.55	16.37	24.10.2022	4.2	13.8	92.9	44.0	22.0	15.4	125.3	77.3	0.4	11.44
25.10.2022	5.9	14.9	60.7	27.6	4.0	1.68	0.15	ND	ND	ND	0.55	1.29	25.10.2022	2.6	11.0	73.9	40.8	24.6	12.8	146.0	104.0	0.5	15.81
26.10.2022	4.5	13.2	52.7	33.7	5.4	1.30	ND	ND	ND	ND	0.02	1.16	26.10.2022	2.5	10.4	64.9	40.1	22.0	12.6	89.9	42.0	0.5	13.01
27.10.2022	4.0	12.8	62.9	27.6	3.7	1.13	ND	ND	ND	ND	0.17	ND	27.10.2022	2.7	9.5	66.2	37.0	38.8	14.8	84.8	37.0	0.4	10.93
28.10.2022	4.1	13.3	56.6	28.2	4.0	1.30	ND	ND	ND	ND	ND	ND	28.10.2022	BDL	BDL	54.2	34.3	22.5	13.4	143.1	51.0	0.6	13.88
29.10.2022	3.9	12.7	67.9	32.2	3.2	1.00	ND	ND	ND	ND	0.22	ND	29.10.2022	BDL	BDL	61.7	32.2	26.0	13.0	120.5	56.0	0.5	12.88
30.10.2022	3.5	12.1	55.8	28.1	3.7	1.17	ND	ND	ND	ND	ND	ND	30.10.2022	2.7	BDL	60.1	35.0	32.5	17.3	169.6	85.0	0.7	17.74
31.10.2022	4.7	13.5	72.4	32.7	3.9	1.23	ND	ND	ND	ND	ND	ND	31.10.2022	2.5	9.1	56.8	30.6	24.3	13.2	110.7	47.0	0.5	11.13

ANNEXURE-III									
Date	MC, Nalagarh				Nehru Park, Manali				
	Regulatory Parameters				Regulatory Parameters				
	SO <sub>2</sub> (ug/m <sup>3</sup> )	NO <sub>x</sub> (ug/m <sup>3</sup> )	PM10 (ug/m <sup>3</sup> )	PM 2.5 (ug/m <sup>3</sup> )	SO <sub>2</sub> (ug/m <sup>3</sup> )	NO <sub>x</sub> (ug/m <sup>3</sup> )	PM10 (ug/m <sup>3</sup> )	PM 2.5 (ug/m <sup>3</sup> )	NH <sub>3</sub> ug/m <sup>3</sup>
17.10.2022	BDL	13.1	65.0	20.9	BDL	BDL	48.1	14.2	2.14
18.10.2022	BDL	14.0	83.0	25.0	BDL	BDL	34.2	13.3	2.15
19.10.2022	BDL	13.6	83.0	25.0	BDL	BDL	40.6	17.4	2.16
20.10.2022	BDL	13.0	89.0	29.9	BDL	BDL	32.1	17.0	2.20
21.10.2022	BDL	13.5	85.0	25.0	BDL	BDL	52.5	12.9	2.40
22.10.2022	BDL	13.9	110.0	38.9	BDL	BDL	44.2	17.2	2.53
23.10.2022	BDL	13.1	115.0	37.5	BDL	BDL	41.0	16.7	2.15
24.10.2022	BDL	16.0	116.6	41.6	3.9	BDL	62.8	25.5	3.43
25.10.2022	BDL	14.1	101.7	33.2	3.2	BDL	57.1	16.8	2.91
26.10.2022	BDL	14.8	86.0	29.2	2.4	BDL	41.0	12.5	2.32
27.10.2022	BDL	14.9	86.0	25.0	2.1	BDL	39.4	8.4	2.22
28.10.2022	BDL	13.5	82.0	25.0	2.3	BDL	36.4	5.9	2.16
29.10.2022	BDL	14.1	93.0	29.2	2.1	BDL	42.6	-	2.09
30.10.2022	BDL	14.1	84.0	25.0	2.5	BDL	47.0	-	2.21
31.10.2022	BDL	12.5	72.0	20.8	2.1	BDL	43.9	-	2.01

### Air Quality Index during Pre-Diwali, Diwali and Post-Diwali

PRE-DIWALI										AQI Pre Diwali	DIWALI DAY 24.10.2022	AQI Diwali Day	POST DIWALI							Average Post Diwali	AQI Post-Diwali
Sr. No	Name of Location	17.10.2022	18.10.2022	19.10.2022	20.10.2022	21.10.2022	22.10.2022	23.10.2022	Average Pre-Diwali				25.10.2022	26.10.2022	27.10.2022	28.10.2022	29.10.2022	30.10.2022	31.10.2022		
		AQI	AQI	AQI	AQI	AQI	AQI	AQI		AQI	AQI	AQI	AQI	AQI	AQI	AQI					
1	Shimla	25	20	31	31	35	39	25	29	Good	47	Good	35	26	26	26	36	27	25	29	Good
2	Parwanoo	28	43	37	36	40	50	45	40	Good	83	Satisfactory	34	32	36	45	35	64	25	39	Good
3	Dharamshala	48	32	58	34	42	36	52	43	Good	127	Moderate	50	30	41	51	55	53	46	47	Good
4	Damtal	51	37	71	40	44	40	57	49	Good	120	Moderate	49	51	58	49	52	51	64	53	Satisfactory
5	Sunder Nagar	50	63	42	57	46	49	45	50	Good	57	Satisfactory	48	58	48	58	50	55	44	52	Satisfactory
6	Poanta Sahib	62	63	113	98	103	77	77	85	Satisfactory	123	Moderate	105	80	85	66	103	64	75	83	Satisfactory
7	Kala Amb	53	31	22	33	80	72	65	51	Satisfactory	88	Satisfactory	61	56	63	57	68	56	72	62	Satisfactory
8	Una	56	60	60	58	54	68	77	62	Satisfactory	93	Satisfactory	74	67	66	57	62	60	57	63	Satisfactory
9	Baddi	143	139	103	121	117	123	109	122	Moderate	157	Moderate	247	90	76	129	113	183	107	135	Moderate
10	Nalagarh	65	83	83	89	85	107	110	89	Satisfactory	111	Moderate	101	86	86	82	93	84	72	86	Satisfactory
11	Manali	48	34	41	34	53	44	41	42	Good	63	Satisfactory	57	57	39	36	43	47	44	46	Good
State Average		57	55	60	57	64	64	64	60		97		78	58	57	60	65	68	57	63	
(60) Satisfactory										(97) Satisfactory			(63) Satisfactory								

Good (0-50)
Satisfactory (51-100)
Moderate (101-200)

Poor (201-300)
Very Poor (301-400)
Severe (>401)

<b>Ambient Noise Data during Pre-Diwali and Diwali Day 2022</b>						
<b>Area</b>	<b>Zone</b>	<b>Location</b>	<b>Ambient Noise Standards</b>		<b>Data of Noise Level</b>	
			<b>Day</b>	<b>Night</b>	<b>18<sup>th</sup> October 2022</b>	<b>24<sup>th</sup> October 2022</b>
					<b>(18:00Hrs-24:00Hrs)</b>	<b>(18:00Hrs-24:00Hrs)</b>
					<b>dB (A) Leq</b>	
Shimla	C	Shimla (BCS Area)	65	55	48.7	69.8
Parwanoo	C/R	Sector-4, Parwanoo	55	40	52.1	65.4
Poanta Sahib	R	Himuda Colony, Shubkhera, Poanta Sahib	55	40	52.9	57.9
Una	R	Rakkar Colony	55	40	46.1	58.9
Dharamshala	R	Regional Office Dharamshala	55	40	47.1	69.7
Baddi	C/R	Baddi Phase-I	65	55	63.7	68.8
Kullu	C	Near Dhalpur Ground, Kullu	65	55	52.1	65.8
Bilaspur	C/R	Housing Board Colony Bilaspur	65	55	47.4	58.8
Kinnaur	C	Recongpeo (Distt.Kinnaur)	65	55	51.7	65.8
Rampur	C	Rampur Bushar (Distt. Shimla)	65	55	52.3	66.3
Chamba	R	Regional Office Chamba	55	40	52.6	68.4
Note:- S = Silence, C = Commercial, I = Industrial, R=Residential						