

**REPORT  
OF  
AMBIENT AIR AND NOISE MONITORING**

**DURING 20-10-2019 TO 03-11-2019**



**H. P. STATE POLLUTION CONTROL BOARD  
PHASE-III, NEW SHIMLA-171009.**

## **Report on Ambient Air Quality and Ambient Noise Monitoring during Diwali, 2019**

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, 2019, from 20.10.2019 to 26.10.2019 (Pre Diwali monitoring), on 27.10.2019 (Diwali Day monitoring) and 28.10.2019 to 03.11.2019 (Post Diwali monitoring). Ambient air quality monitoring at Shimla, Parwanoo, Dharamshala, Damtal (Jassur), Sunder Nagar, Paonta Sahib & Kala Amb was carried out for all 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 (Carbon Monoxide) for 24 hour a day. Ambient air quality monitoring at Una, Baddi & Nalagarh 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>) parameters for 24 hour a day. 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 also carried out at Shimla for metal i.e. Lead, Nickel, and Arsenic in PM<sub>10</sub>, and Lead, Nickel, Arsenic, Aluminium, Barium, Iron & Strontium in PM<sub>2.5</sub>. The heavy metal monitoring and analysis was also carried out at Parwanoo, Paonta Sahib, Sunder Nagar & Dharamshala for Lead, Nickel, and Arsenic in PM<sub>10</sub>, and Lead, Nickel, Arsenic, Aluminium & Iron in PM<sub>2.5</sub>. 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, 2019 are as under:**

#### **SHIMLA**

The ambient air quality monitoring at Shimla was carried out at two locations i.e. Old Bus Stand, Shimla & Hotel Bridge View Ridge, Shimla. The 24 hour average value of RSPM (PM<sub>10</sub>) at Old Bus Stand & Ridge was observed 90 & 68µg/m<sup>3</sup> respectively 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, 2019 was comparatively higher than the concentration of RSPM (PM<sub>10</sub>) observed during Diwali last year i.e. 76µg/m<sup>3</sup>. The maximum concentration of RSPM (PM<sub>10</sub>) in the ambient air on Diwali day was observed as 126µg/m<sup>3</sup> at Old Bus Stand and 89µg/m<sup>3</sup> at Ridge during 2:00PM-10:00PM. Similarly, 24 hour average value of RSPM (PM<sub>2.5</sub>) at Old Bus Stand & Ridge Shimla was observed 53 & 39µg/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, 2019 was comparatively higher than the concentration of RSPM (PM<sub>2.5</sub>) observed during Diwali last year i.e. 49µg/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 6.7 & 32.4µg/m<sup>3</sup> at Old Bus Stand and 5.0 & 19.1 µg/m<sup>3</sup> at Ridge respectively on Diwali day which was well below the prescribed standard limit of 80µg/m<sup>3</sup>.

This year the State Board has started the monitoring of new parameters i.e. O<sub>3</sub>, NH<sub>3</sub> & CO. 8 hour average O<sub>3</sub> concentration at Old Bus Stand & Ridge were 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 Old Bus Stand & Ridge was observed 8.90µg/m<sup>3</sup> & 5.70µg/m<sup>3</sup> during Diwali day which is below the standard prescribed limit of 400µg/m<sup>3</sup>. The 8 hour average concentration of CO at Shimla was observed within the standard prescribed limit of 2mg/m<sup>3</sup> during Pre Diwali, Diwali & Post Diwali monitoring.

Further, as per directions issued by the Central Pollution Control Board, the heavy metal analysis was also carried out at Capital city. The concentrations of Lead, Nickel & Arsenic in PM<sub>10</sub> and Lead, Nickel, Arsenic, Aluminium, Iron, Barium and Strontium in PM<sub>2.5</sub> at Shimla town were found within the standard prescribed limit during Pre Diwali, Diwali & Post Diwali monitoring.

## **PARWANOO**

The ambient air quality monitoring at Parwanoo were carried out at two locations i.e. Sector-IV & Sector-I, Parwanoo. The 24 hour average RSPM (PM<sub>10</sub>) concentration at Sector-IV & Sector-I Parwanoo on Diwali day was observed 191µg/m<sup>3</sup> & 192µg/m<sup>3</sup> respectively which are higher 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, shows the impact of bursting of fire crackers and other activities on the ambient air quality on Diwali festival 2019. The maximum concentration of RSPM (PM<sub>10</sub>) in the ambient air on Diwali was observed as 272 & 275µg/m<sup>3</sup> during 10:00PM-06:00AM. The concentration of RSPM(PM<sub>10</sub>) 191µg/m<sup>3</sup> at Sector-IV, Parwanoo was observed comparatively much higher than the concentration of RSPM(PM<sub>10</sub>) observed during Diwali last year i.e. 171µg/m<sup>3</sup>. Similarly, 24 hour average RSPM (PM<sub>2.5</sub>) concentration in Parwanoo at Sector-IV & Sector-I were observed same i.e. 56µg/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>) 56µg/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. 117µg/m<sup>3</sup>. The average concentration of SO<sub>2</sub> and NO<sub>x</sub> at Sector-IV & Sector-I, Parwanoo were observed well below the prescribed standards of 80µg/m<sup>3</sup> for 24 hour i.e. 4.0 & 4.4µg/m<sup>3</sup> of SO<sub>2</sub> and 21.7 & 23.6µg/m<sup>3</sup> of NO<sub>x</sub> respectively on Diwali day.

The 8 hour average concentration of O<sub>3</sub> at **Sector-IV & Sector-I 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 **0.13 & 0.12µg/m<sup>3</sup>** on Diwali day are within the prescribed limit of 400µg/m<sup>3</sup>. 8 hour average concentration of CO was observed within the standard prescribed limit of 2mg/m<sup>3</sup> during Pre Diwali, Diwali & Post Diwali monitoring.

The concentrations of metals Lead, Nickel & Arsenic in PM<sub>10</sub> and Lead, Nickel, Arsenic, Aluminium & Iron in PM<sub>2.5</sub> at Parwanoo 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.

### **DHARAMSHALA**

The ambient air quality monitoring at Dharamshala was carried out at one location i.e. Dari, Dharamshala. The 24 hour average RSPM ( $\text{PM}_{10}$ ) concentration at Dari, Dharamshala was observed higher than the prescribed standards of  $100\mu\text{g}/\text{m}^3$  i.e.  $114\mu\text{g}/\text{m}^3$  during Diwali day. The maximum concentration of RSPM ( $\text{PM}_{10}$ ) in the ambient air on Diwali, 2019 was observed as  $215\mu\text{g}/\text{m}^3$  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  $112\mu\text{g}/\text{m}^3$ . Similarly, 24 hour average RSPM ( $\text{PM}_{2.5}$ ) concentration was observed  $82\mu\text{g}/\text{m}^3$  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.  $79\mu\text{g}/\text{m}^3$ . 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. 4.0 (BDL) &  $14.4\mu\text{g}/\text{m}^3$  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  $0.92\mu\text{g}/\text{m}^3$  on Diwali day is within the prescribed limit of  $400\mu\text{g}/\text{m}^3$ . 8 hour average concentration of CO at Dari, Dharamshala was observed within the standard prescribed limit of  $2\text{mg}/\text{m}^3$  during Pre Diwali, Diwali & Post Diwali monitoring.

The concentrations of metals Lead, Nickel & Arsenic in  $\text{PM}_{10}$  and Lead, Nickel, Arsenic, Aluminium & Iron in  $\text{PM}_{2.5}$  at Dharamshala town were also found within the standard prescribed limit 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 below the prescribed standards of  $100\mu\text{g}/\text{m}^3$  i.e.  $78\mu\text{g}/\text{m}^3$  on Diwali day, 2019. The maximum concentration of RSPM ( $\text{PM}_{10}$ ) in the ambient air was observed as  $98\mu\text{g}/\text{m}^3$  on Diwali day during 2:00PM-10:00PM. The concentration of RSPM ( $\text{PM}_{10}$ )  $78\mu\text{g}/\text{m}^3$  was observed relatively higher than the concentration of RSPM ( $\text{PM}_{10}$ ) observed during Diwali last year  $74\mu\text{g}/\text{m}^3$ . Similarly, 24 hour average RSPM ( $\text{PM}_{2.5}$ ) concentration at Damtal, Jassur was observed  $46\mu\text{g}/\text{m}^3$  lower than the standard prescribed limit of  $60\mu\text{g}/\text{m}^3$  on Diwali day. The concentration of RSPM ( $\text{PM}_{2.5}$ )  $46\mu\text{g}/\text{m}^3$  was observed relatively lower than the concentration of RSPM ( $\text{PM}_{2.5}$ ) observed during Diwali last year i.e.

49 $\mu\text{g}/\text{m}^3$ . The average concentration of  $\text{SO}_2$  and  $\text{NO}_x$  was observed as 4.0 $\mu\text{g}/\text{m}^3$  (BDL) and 11.4 $\mu\text{g}/\text{m}^3$  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 0.97 $\mu\text{g}/\text{m}^3$  on Diwali day is within the prescribed limit of 400 $\mu\text{g}/\text{m}^3$ .

The concentrations of metals Lead, Nickel & Arsenic in  $\text{PM}_{10}$  and Lead, Nickel, Arsenic, Aluminium & Iron in  $\text{PM}_{2.5}$  at Damtal 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.

### **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( $\text{PM}_{10}$ ) concentration at Sunder Nagar was observed higher than the prescribed standards of 100  $\mu\text{g}/\text{m}^3$  i.e. 113 $\mu\text{g}/\text{m}^3$  on Diwali day. The concentration of RSPM ( $\text{PM}_{10}$ ) observed during Diwali, 2019 was comparatively much lower than the concentration of RSPM ( $\text{PM}_{10}$ ) observed during Diwali last year 144 $\mu\text{g}/\text{m}^3$ . The maximum concentration of RSPM ( $\text{PM}_{10}$ ) in the ambient air on Diwali was observed as 151 $\mu\text{g}/\text{m}^3$  during 10:00PM-06:00AM. Similarly, 24 hour average RSPM ( $\text{PM}_{2.5}$ ) concentration was also observed 75 $\mu\text{g}/\text{m}^3$  much higher than the standard prescribed limit of 60 $\mu\text{g}/\text{m}^3$  on Diwali day. The concentration of RSPM ( $\text{PM}_{2.5}$ ) 75 $\mu\text{g}/\text{m}^3$  was observed relatively lower than the concentration of RSPM( $\text{PM}_{2.5}$ ) observed during Diwali last year i.e. 95 $\mu\text{g}/\text{m}^3$ . 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 4.0 $\mu\text{g}/\text{m}^3$  (BDL) and 9.0 $\mu\text{g}/\text{m}^3$  (BDL) which is below the prescribed standard of 80 $\mu\text{g}/\text{m}^3$  for 24 hour.

The 8 hour average  $\text{O}_3$  concentration at Sunder Nagar 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 5.66 $\mu\text{g}/\text{m}^3$  on Diwali day is within the prescribed limit of 400 $\mu\text{g}/\text{m}^3$ . 8 hour average concentration of CO was observed within the standard prescribed limit of 2 $\text{mg}/\text{m}^3$  during Pre Diwali, Diwali day & Post Diwali.

The concentrations of metals Lead, Nickel & Arsenic in  $\text{PM}_{10}$  and Lead, Nickel, Arsenic, Aluminium & Iron in  $\text{PM}_{2.5}$  at Sunder Nagar 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.

## **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. 156µg/m<sup>3</sup> on Diwali day. The maximum concentration of RSPM(PM<sub>10</sub>) in the ambient air was observed as 189µg/m<sup>3</sup> on Diwali day, 2019 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>) 156µg/m<sup>3</sup> was observed relatively higher than the concentration of RSPM(PM<sub>10</sub>) observed during Diwali last year 104µg/m<sup>3</sup>. Similarly 24 hour average RSPM(PM<sub>2.5</sub>) concentration was also observed 97µg/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>) 97µg/m<sup>3</sup> was observed relatively higher than the concentration of RSPM(PM<sub>2.5</sub>) observed during Diwali last year i.e. 70µg/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 8.3µg/m<sup>3</sup> and 20.6µg/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 1.33µg/m<sup>3</sup> on Diwali day is within the prescribed limit of 400µg/m<sup>3</sup>. 24 hour average concentration of CO was observed within the standard prescribed limit of 2mg/m<sup>3</sup> during Pre Diwali, Diwali & Post Diwali monitoring.

The concentrations of metals Lead, Nickel & Arsenic in PM<sub>10</sub> and Lead, Nickel, Arsenic, Aluminium & Iron in PM<sub>2.5</sub> at Paonta Sahib 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 below than the prescribed standards of 100 µg/m<sup>3</sup> i.e. 96µg/m<sup>3</sup> on Diwali day. The maximum concentration of RSPM(PM<sub>10</sub>) was observed as 110µg/m<sup>3</sup> on Diwali, 2019 during 2:00PM-10:00PM. The concentration of RSPM(PM<sub>10</sub>) 96µg/m<sup>3</sup> was observed comparatively higher than the concentration of RSPM(PM<sub>10</sub>) observed during Diwali last year 87µg/m<sup>3</sup>. Similarly, 24 hour average RSPM(PM<sub>2.5</sub>) concentration was observed 59µg/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>) 59µg/m<sup>3</sup> was observed relatively higher than the concentration of RSPM(PM<sub>2.5</sub>) observed during Diwali last year i.e. 53µg/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 6.2µg/m<sup>3</sup> and 19.1µg/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 1.0µg/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> and Lead, Nickel, Arsenic, Aluminium & Iron in PM<sub>2.5</sub> at Trilokpur 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.

### **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. 79µg/m<sup>3</sup> on Diwali day. The maximum concentration of RSPM(PM<sub>10</sub>) in the ambient air was observed as 94µg/m<sup>3</sup> on Diwali day, 2019 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>) 79µg/m<sup>3</sup> was observed comparatively much lower than the concentration of RSPM(PM<sub>10</sub>) observed during Diwali last year i.e. 103µg/m<sup>3</sup>. The concentration of RSPM(PM<sub>2.5</sub>) 29µg/m<sup>3</sup> was observed on Diwali day and is within the standard prescribed limit of 60 µg/m<sup>3</sup> on Diwali day. 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 4.0µg/m<sup>3</sup> and 9.0µg/m<sup>3</sup> which is below the prescribed standard limit 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. Housing Board, Baddi. The 24 hour average RSPM(PM<sub>10</sub>) concentration at Housing Board, Baddi was observed higher than the prescribed standards of 100 µg/m<sup>3</sup> i.e. 110µg/m<sup>3</sup> on Diwali day. The concentration of RSPM(PM<sub>10</sub>) observed during Diwali, 2019 was comparatively much lower than the concentration of RSPM(PM<sub>10</sub>) observed during Diwali last year i.e. 248µg/m<sup>3</sup>. The maximum concentration of RSPM(PM<sub>10</sub>) in the ambient air on Diwali was observed as 141µg/m<sup>3</sup> during 2:00PM-10:00PM. Similarly 24 hour average RSPM(PM<sub>2.5</sub>) concentration was also observed 46µg/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>) 46µg/m<sup>3</sup> was observed relatively lower than the concentration of RSPM(PM<sub>2.5</sub>) observed during Diwali last year 75µg/m<sup>3</sup>. The average concentration of SO<sub>2</sub> and NO<sub>x</sub> was observed as 4.0 µg/m<sup>3</sup> (BDL) and 31.9µg/m<sup>3</sup> on Diwali which is below the prescribed standard of 80µg/m<sup>3</sup> for 24 hour.

### **NALAGARH**

The ambient air quality monitoring at Nalagarh was carried out at one location i.e. MC, Nalagarh. The 24 hour average RSPM(PM<sub>10</sub>) concentration at MC, Nalagarh was also observed lower than the prescribed standards of 100 µg/m<sup>3</sup> i.e. 92µg/m<sup>3</sup> on Diwali day. The concentration of RSPM(PM<sub>10</sub>) observed during Diwali, 2019 was

comparatively lower than the concentration of RSPM(PM<sub>10</sub>) observed during Diwali last year 222µg/m<sup>3</sup>. The maximum concentration of RSPM(PM<sub>10</sub>) in the ambient air on Diwali was observed as 114µg/m<sup>3</sup> during 02:00PM-10:00PM. Further; 24 hour average RSPM(PM<sub>2.5</sub>) concentration was observed 37µg/m<sup>3</sup> within the standard prescribed limit of 60 µg/m<sup>3</sup> on Diwali day. The average concentration of SO<sub>2</sub> and NO<sub>x</sub> was observed as 4.0µg/m<sup>3</sup> (BDL) and 28.6µg/m<sup>3</sup> on Diwali day.

### **MANALI**

The ambient air quality monitoring at Manali was carried out at one location i.e. Nehru Park, Manali. The 24 hour average RSPM(PM<sub>10</sub>) concentration at Nehru Park, Manali was observed much higher than the prescribed standards of 100µg/m<sup>3</sup> i.e. 121µg/m<sup>3</sup> on Diwali day. The concentration of RSPM(PM<sub>10</sub>) observed during Diwali, 2019 was comparatively much lower than the concentration of RSPM(PM<sub>10</sub>) observed during Diwali last year 208µg/m<sup>3</sup>. The maximum concentration of RSPM(PM<sub>10</sub>) observed was 183µg/m<sup>3</sup> 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(PM<sub>2.5</sub>) concentration was observed 40µg/m<sup>3</sup> within the standard prescribed limit of 60 µg/m<sup>3</sup> on Diwali day. The concentration of RSPM(PM<sub>2.5</sub>) 40µg/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. 60µg/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 4.0µg/m<sup>3</sup> (BDL) and 14.83µg/m<sup>3</sup> which is below the prescribed standard of 80µg/m<sup>3</sup> for 24 hour.

The 24 hour average NH<sub>3</sub> concentration at Nehru Park, Manali was observed 4.05µg/m<sup>3</sup> which is within the prescribed standard limit of 400µg/m<sup>3</sup> on Diwali day.

### **Ambient Noise monitoring report of Himachal Pradesh during Diwali Festival, 2019 are as under:**

Himachal Pradesh State Pollution Control Board has also conducted ambient noise monitoring on the occasion of Diwali festival, 2019, to study the impact of bursting of crackers and other related activities on 21.10.2019 (Normal day monitoring) and 27.10.2019 (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 Ridge during Diwali festival on 21.10.2019 and 27.10.2019. The average ambient noise level (Leq) monitored from 18:00hrs-24:00hrs on 21.10.2019, 27.10.2019 was observed as 47.2 dB(A) and 78.6 dB(A) respectively. The maximum impact of bursting of crackers on the ambient noise level on Diwali day was observed 86.9dB (A) between 10.00PM to 11.00PM. The ambient noise



level 78.6 dB(A) at Shimla was observed higher than the noise level 64.5 dB(A) observed during Diwali last year.

The noise value cannot be compared with prescribed noise level standard as the value collected can't be matched with time period (Day time 06:00AM to 10:00PM & night time 10:00PM to 06:00AM).

### **PARWANOO**

The ambient noise level was monitored at Sector IV, Parwanoo during Diwali festival on 21.10.2019 and 27.10.2019. The ambient noise level (Leq) monitored from 18:00hrs-24:00hrs on 21.10.2019, 27.10.2019 was observed as 51.9 dB(A) and 62.4 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 75.6 dB(A) was observed.

The ambient noise level 62.4 dB (A) at Parwanoo was observed lower than the noise level 66.8 dB(A) observed during Diwali last year.

### **BILASPUR**

The ambient noise level was monitored at Bilaspur town during Diwali festival on 21.10.2019 and 27.10.2019. The ambient noise level (Leq) monitored from 18:00hrs-24:00hrs on 21.10.2019, 27.10.2019 was observed as 53.2 dB(A) and 60.8 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 72.4 dB (A) was observed.

The ambient noise level 60.8 dB(A) at Bilaspur was observed almost same than the noise level 60.3 dB(A) observed during Diwali last year.

### **CHAMBA**

The ambient noise level was monitored at Chowgan Bazar Chamba, (Commercial zone), Hardaspur, Chamba (Residential zone) and Near Medical Collage/Distt. Hospital, Chamba (Silence zone).

The ambient noise level (Leq) monitored at Chowgan Bazar Chamba (commercial zone), from 18:00hrs-20:00hrs on 21.10.2019 and 27.10.2019 was observed as 69.5 dB(A) and 75.4 dB(A) respectively in commercial zone. 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 80.7 dB(A) was observed.

The ambient noise level (Leq) Near Medical Collage/Distt. Hospital, Chamba (Silence zone) was monitored from 20:00hrs-22:00hrs on 21.10.2019 and

27.10.2019 was observed as 38.8 dB(A) and 58.1 dB(A) respectively in Silent zone Near Medical Collage/Distt. Hospital, Chamba. 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) 60.0 dB(A) was observed.

The ambient noise level (Leq) at Hardaspur, Chamba (Residential zone) monitored from 22:00hrs-24:00hrs on 21.10.2019 and 27.10.2019 was observed as 43.6 dB (A) and 50.5 dB(A) respectively in Residential zone. 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) 52.8 dB(A) was observed.

### **PAONTA SAHIB**

The ambient noise level was monitored at HIMUDA Colony, Shubkhera, Paonta Sahib during Diwali festival on 21.10.2019 and 27.10.2019. The ambient noise level (Leq) monitored from 18:00hrs-24:00hrs on 21.10.2019, 27.10.2019 was observed as 49.9 dB(A) and 63.9 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 71.5 dB(A) was observed. The ambient noise level 63.9 dB(A) at Paonta sahib was observed almost same than the noise level 63.5 dB(A) observed during Diwali last year.

### **UNA**

The ambient noise level was monitored at Rotary Chowk, Una (Commercial zone), Rakkar Colony, Una (Residential zone) and Govt. Hospital, Una (Silence zone) on 21.10.2019 and 27.10.2019 (Pre Diwali and Diwali day).

The ambient noise level (Leq) at Rotary Chowk, Una (Commercial zone), was monitored from 18:00hrs-20:00hrs on 21.10.2019 and 27.10.2019 and the values were observed as 70.7 dB(A) and 91.9 dB(A) respectively in commercial zone. The maximum impact of bursting of crackers on the ambient noise level on Diwali day was observed between 07:00PM to 20:00PM where noise level (Leq) of 93.3 dB(A) was observed.

The ambient noise level (Leq) at Govt. Hospital, Una (Silence zone), monitored from 20:00hrs-22:00hrs on 21.10.2019 and 27.10.2019 was observed as 45.9 dB (A) and 66.2 dB(A) respectively in Silent 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 67.4 dB(A) was observed.

The ambient noise level (Leq) at Rakkar Colony, Una (Residential zone) was monitored from 22:00hrs-24:00hrs on 21.10.2019 and 27.10.2019 and the values were observed as 41.5 dB(A) and 45 dB(A) respectively in Residential zone. The maximum impact of bursting of crackers on the ambient noise level on Diwali day was observed between 11:00PM to 12:00PM where noise level (Leq) of 46.9 dB(A) was observed.

Further, the ambient noise level 91.9 dB(A) at Una for commercial zone was observed higher than the noise level 86.2 dB(A) observed during Diwali last year. The ambient noise level 45.0 dB(A) for residential zone was observed lower than the noise level 64.8 dB(A) observed during Diwali last year. The ambient noise level 66.2 dB(A) for silent zone was observed higher than the noise level 62.2 dB(A) observed during Diwali last year.

### **BADDI**

The ambient noise level was monitored at Phase-I, Baddi during Diwali festival on 21.10.2019 and 27.10.2019. The ambient noise level (Leq) monitored from 18:00hrs-24:00hrs on 21.10.2019, 27.10.2019 was observed as 60.1 dB(A) and 71.7 dB(A) respectively. The maximum impact of bursting of crackers on the ambient noise level on Diwali day was observed between 07:00PM-08:00PM where noise level (Leq) of 80.3 dB(A) was observed. The ambient noise level 71.7 dB(A) at Phase-I, Baddi for residential zone was observed lower than the noise level 89.1 dB(A) observed during Diwali last year.

### **RECONG PEO**

The ambient noise level was monitored at Recong Peo, District Kinnaur during Diwali festival on 21.10.2019 and 27.10.2019. The ambient noise level (Leq) monitored from 18:00hrs-24:00hrs on 21.10.2019, 27.10.2019 was observed as 53.1 dB(A), and 76.3 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 where noise level (Leq) of 83.5 dB(A) was observed. The ambient noise level 76.3 dB(A) at Recong Peo was observed higher than the noise level 68.8 dB(A) observed during Diwali last year.

### **RAMPUR BUSHAR**

The ambient noise level was monitored at Rampur, Distt. Shimla during Diwali festival on 21.10.2019 and 27.10.2019. The ambient noise level (Leq) monitored from 18:00hrs-24:00hrs on 21.10.2019, 27.10.2019 was observed as 52.7 dB(A) and 81.1 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 84.6 dB (A) was observed. The ambient noise level 81.1 dB (A) at Rampur Bushar was also observed lower than the noise level 81.9 dB (A) observed during Diwali last year.

### **DHARAMSHALA**

The ambient noise level was monitored on Regional office Dharamshala during Diwali festival on 21.10.2019 and 27.10.2019. The ambient noise level (Leq) monitored from 18:00hrs-24:00hrs on 21.10.2019, 27.10.2019 was observed as 44.8 dB(A) and 64.0 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 where noise level (Leq) of 76.4 dB(A) was observed. The ambient noise level 64.0 dB(A) at Dharamshala was observed lower than the noise level 64.6 dB(A) observed during Diwali last year.

## KULLU

The ambient noise level was monitored near Dhalpur Ground, Kullu during Diwali festival on 21.10.2019 and 27.10.2019. The ambient noise level (Leq) monitored from 18:00hrs-24:00hrs on 21.10.2019, 27.10.2019 was observed as 45.7 dB(A) and 52.3 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 73.8 dB (A) was observed. The ambient noise level 52.3 dB(A) at near Dhalpur Ground, Kullu was observed lower than the noise level 66.1 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, 2019 was comparatively more than the values observed on the normal days which clearly indicates the impact of bursting of fire crackers and other activities on the ambient air quality. During Diwali, 2019 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 **Parwanoo, Paonta Sahib, Manali, Dharamshala, Sunder Nagar & Baddi**, however, the RSPM(PM<sub>10</sub>) concentration was observed within the **prescribed standard at Kala Amb, Nalagarh, Shimla, Una & Damtal on Diwali day**. Further, concentration of **RSPM(PM<sub>10</sub>)** at **Parwanoo, Paonta Sahib, Dharamshala, Kala Amb, Shimla & Damtal** were observed **more** than the concentration observed during **Diwali, 2018** whereas, concentration of **RSPM(PM<sub>10</sub>)** at **Manali, Sunder Nagar, Baddi, Nalagarh & Una** stations were observed comparatively **lower** than the concentration of RSPM observed during Diwali, 2018.

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 **Paonta Sahib, Dharamshala & Sunder Nagar** however, the RSPM(PM<sub>2.5</sub>) concentration was observed within the **prescribed standard at Kala Amb, Parwanoo, Shimla, Damtal, Baddi, Manali, Nalagarh & Una 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, as per directions issued by the Central Pollution Control Board, the **heavy metal analysis** were also carried out in all Laboratories i.e. **Parwanoo, Shimla, Paonta Sahib, Sunder Nagar & Dharamshala**. The concentrations of Lead, Nickel & Arsenic in PM<sub>10</sub> and Lead, Nickel, Arsenic, Aluminium, Iron, Barium and Strontium in PM<sub>2.5</sub> was monitored at State capital **Shimla** for consecutive 15 days and all parameters were found within the prescribed limit on Pre Diwali, Diwali & Post Diwali period.

The concentrations of Lead, Nickel & Arsenic in PM<sub>10</sub> and Lead, Nickel, Arsenic, Aluminium & Iron in PM<sub>2.5</sub> except Barium & Strontium was monitored at

Central/Regional Laboratories **Parwanoo, Paonta Sahib, Sunder Nagar & Dharamshala** and found within the standard prescribed limit on Pre Diwali, Diwali & Post Diwali period.

It can be concluded from the ambient air quality monitoring carried out by the State Board that on Diwali day **Parwanoo was highest polluted** and **Shimla at Ridge was cleanest** location/ town in the State with respect to RSPM(PM<sub>10</sub>) concentration and with respect to RSPM(PM<sub>2.5</sub>) concentration **Paonta Sahib was highest polluted and Una was cleanest** location/ town. 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 at **Baddi, Parwanoo, Dharamshala, Damtal, Sunder Nagar, Una and Nalagarh** were observed **4.0 µg/m<sup>3</sup>** (BDL) and the highest concentration was observed at **Paonta Sahib 8.3µg/m<sup>3</sup>** the concentration of **NO<sub>x</sub>** was observed **9.0µg/m<sup>3</sup>(BDL)** at **Sunder Nagar** and **Una** and the highest concentration was observed at **Shimla (Old Bus Stand) 32.40µg/m<sup>3</sup>**. The concentrations of **NH<sub>3</sub>, O<sub>3</sub> and CO** at all locations were observed within the standard prescribed limit on Pre Diwali, Diwali and Post Diwali monitoring. The Concentration of metals 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

Annexure-I-Data of Noise Level														
Area	Zone	Location	Date						Date					
			21/10/2019						27/10/2019					
			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	Ridge	47.2	75.6	30.3	46.9	41.3	37.8	78.6	109.8	49.0
Parwanoo	R	Sector-4, Parwanoo	51.9	77.1	44.8	--	--	--	62.4	98.4	39.2	--	--	--
Poanta Sahib	R	Himuda Colony, Shubkhera, Poanta Sahib	49.9	73.8	44.8	--	--	--	63.9	98.0	37.5	--	--	--
Una	C	Rotary Chowk, Una	70.7	84.1	47.2	72.5	70.0	67.4	91.85	107.5	31.6	96.0	84.25	53.9
	R	Rakkar Colony	41.5	59.3	33.2	44.5	38.7	35.5	45.0	65.9	30.0	45.45	37.25	32.9
	S	Govt. Hospital Una	45.9	61.5	34.2	49.3	43.6	38.4	66.2	89.0	30.9	69.8	61.7	48
Dharamshala	R	Regional office Dharamshala	44.8	72.4	31.3	--	--	--	64.03	97.60	38.10	--	--	--
Baddi	C/R	Baddi Phase-I	60.1	105.2	37.7	58.4	47.9	45.4	71.7	106.5	39.1	71.8	61.5	54.2
Kullu	C	Near Dhalpur Ground, Kullu	45.7	70.5	39.3	46.5	45.3	43.9	52.3	98.8	41.2	57.4	50.2	46.6
Bilaspur	C/R	Bilaspur Town	53.2	76.8	37.6	--	--	--	60.8	98.8	38.6	--	--	--
Kinnaur	C	Recongpeo (Distt.Kinnaur)	53.1	66.1	35.5	--	--	--	76.3	89.7	61.3	81.7	75.1	63.5
Rampur	C	Rampur Bushar (Distt. Shimla)	52.7	66.8	36.1	--	--	--	81.1	85.5	64.6	81.8	83.2	65.6
Chamba	S	Near Medical Collage/Diostt. Hospital Chamba	38.8	56.7	31.4	40.0	36.6	35.5	58.1	77.4	39.2	60.6	50.8	44.9
	C	Chowgan Bazar Chamba (Main Market Chamba)	69.5	76.7	41.9	71.6	69.2	66.1	75.4	86.1	49.1	77.6	73.5	66.3
	R	Residential Area Hardaspur, Chamba	43.6	58.4	33.1	46.5	41.3	37.2	50.5	69.9	34.5	53.7	44.6	37.3

\* 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						
		20.10.2019	21.10.2019	22.10.2019	23.10.2019	24.10.2019	25.10.2019	26.10.2019	27.10.2019	28.10.2019	29.10.2019	30.10.2019	31.10.2019	01.11.2019	02.11.2019	03.11.2019
Old Bus Stand, Shimla	6AM-2PM	49	71	56	48	46	78	80	62	54	42	51	57	43	47	41
	2PM-10PM	64	83	60	53	56	91	97	126	60	51	58	52	57	46	44
	10PM-6AM	73	66	41	37	30	51	53	83	30	26	27	27	23	32	23
	<b>24 hour Avg.</b>	<b>62</b>	<b>73</b>	<b>52</b>	<b>46</b>	<b>44</b>	<b>73</b>	<b>77</b>	<b>90</b>	<b>48</b>	<b>40</b>	<b>45</b>	<b>45</b>	<b>41</b>	<b>41</b>	<b>36</b>
Hotel Bridge View, Ridge Shimla	6AM-2PM	28	22	28	30	28	51	59	54	37	32	37	32	39	28	25
	2PM-10PM	33	30	36	38	35	65	72	89	34	41	49	--	56	41	40
	10PM-6AM	26	17	20	32	19	41	43	60	22	26	27	51	23	19	19
	<b>24 hour Avg.</b>	<b>29</b>	<b>23</b>	<b>28</b>	<b>33</b>	<b>27</b>	<b>53</b>	<b>58</b>	<b>68</b>	<b>31</b>	<b>33</b>	<b>38</b>	<b>41</b>	<b>39</b>	<b>29</b>	<b>28</b>
Parwanoo, Sector-IV	6AM-2PM	53	60	61	67	66	60	80	88	97	89	58	56	52	52	48
	2PM-10PM	58	60	64	73	77	77	114	214	106	69	60	55	54	48	49
	10PM-6AM	46	56	50	50	64	65	95	272	90	66	43	42	44	49	53
	<b>24 hour Avg.</b>	<b>52</b>	<b>59</b>	<b>58</b>	<b>63</b>	<b>69</b>	<b>67</b>	<b>96</b>	<b>191</b>	<b>98</b>	<b>75</b>	<b>54</b>	<b>51</b>	<b>50</b>	<b>50</b>	<b>50</b>
Parwanoo, Sector-I	6AM-2PM	51	60	81	75	54	81	80	96	101	89	62	61	62	58	51
	2PM-10PM	50	65	79	65	86	68	100	206	92	92	46	56	63	59	58
	10PM-6AM	25	46	64	63	80	75	108	275	78	77	42	51	49	50	46
	<b>24 hour Avg.</b>	<b>42</b>	<b>57</b>	<b>75</b>	<b>68</b>	<b>73</b>	<b>75</b>	<b>96</b>	<b>192</b>	<b>90</b>	<b>86</b>	<b>50</b>	<b>56</b>	<b>58</b>	<b>56</b>	<b>52</b>

## ANNEXURE-II (a)

Area and Location	Time of sampling	Pre Diwali Monitoring							Diwali Day	Post Diwali Monitoring						
		20.10.2019	21.10.2019	22.10.2019	23.10.2019	24.10.2019	25.10.2019	26.10.2019	27.10.2019	28.10.2019	29.10.2019	30.10.2019	31.10.2019	01.11.2019	02.11.2019	03.11.2019
Dari, Dharamshala	6AM-2PM	20	30	19	10	24	56	42	57	48	42	35	33	34	57	53
	2PM-10PM	29	33	40	30	41	66	81	215	87	64	63	69	68	94	55
	10PM-6AM	19	14	12	9	8	25	39	69	38	31	25	17	29	25	17
	<b>24 hour Avg.</b>	<b>23</b>	<b>26</b>	<b>24</b>	<b>16</b>	<b>24</b>	<b>49</b>	<b>54</b>	<b>114</b>	<b>58</b>	<b>46</b>	<b>41</b>	<b>40</b>	<b>44</b>	<b>59</b>	<b>42</b>
Ram Gopal Mandir, Damtal	6AM-2PM	25	25	32	30	74	63	71	57	73	74	88	87	58	102	106
	2PM-10PM	28	46	50	58	51	74	87	98	88	90	93	98	114	88	53
	10PM-6AM	33	27	26	40	30	62	49	78	53	59	37	40	110	82	51
	<b>24 hour Avg.</b>	<b>29</b>	<b>33</b>	<b>36</b>	<b>43</b>	<b>52</b>	<b>66</b>	<b>69</b>	<b>78</b>	<b>71</b>	<b>74</b>	<b>73</b>	<b>75</b>	<b>94</b>	<b>91</b>	<b>70</b>
Regional Office, Sunder Nagar	6AM-2PM	50	87	91	87	89	94	86	75	109	69	66	68	74	70	64
	2PM-10PM	39	131	59	46	68	95	94	112	77	85	72	75	96	94	81
	10PM-6AM	34	26	35	28	26	50	73	151	51	65	65	69	63	62	54
	<b>24 hour Avg.</b>	<b>41</b>	<b>81</b>	<b>62</b>	<b>54</b>	<b>61</b>	<b>80</b>	<b>84</b>	<b>113</b>	<b>79</b>	<b>73</b>	<b>68</b>	<b>71</b>	<b>78</b>	<b>75</b>	<b>66</b>
Office Building, Shubkhera, Poanta Sahib	6AM-2PM	24	46	50	62	55	57	103	132	104	112	112	85	65	80	64
	2PM-10PM	61	87	70	96	102	133	144	148	135	88	90	91	120	120	110
	10PM-6AM	48	95	90	61	58	95	128	189	156	72	74	90	104	100	105
	<b>24 hour Avg.</b>	<b>44</b>	<b>76</b>	<b>70</b>	<b>73</b>	<b>72</b>	<b>95</b>	<b>125</b>	<b>156</b>	<b>132</b>	<b>91</b>	<b>92</b>	<b>89</b>	<b>96</b>	<b>100</b>	<b>93</b>
Trilokpur, Kala Amb	6AM-2PM	14	59	46	63	49	47	63	81	72	63	80	57	46	55	66
	2PM-10PM	27	58	66	93	58	53	90	110	78	73	55	56	53	59	70
	10PM-6AM	21	37	30	44	50	85	67	98	57	58	40	55	39	53	60
	<b>24 hour Avg.</b>	<b>21</b>	<b>51</b>	<b>47</b>	<b>67</b>	<b>52</b>	<b>62</b>	<b>73</b>	<b>96</b>	<b>69</b>	<b>65</b>	<b>58</b>	<b>56</b>	<b>46</b>	<b>56</b>	<b>65</b>



## ANNEXURE-II (a)

Area and Location	Time of sampling	Pre Diwali Monitoring							Diwali Day	Post Diwali Monitoring						
		20.10.2019	21.10.2019	22.10.2019	23.10.2019	24.10.2019	25.10.2019	26.10.2019	27.10.2019	28.10.2019	29.10.2019	30.10.2019	31.10.2019	01.11.2019	02.11.2019	03.11.2019
Regional Office, Una	6AM-2PM	58	60	48	59	59	61	63	68	76	63	63	60	63	61	60
	2PM-10PM	58	66	57	60	66	65	65	75	69	63	60	60	61	62	58
	10PM-6AM	58	54	57	51	57	63	66	94	63	62	62	59	59	59	61
	<b>24 hour Avg.</b>	<b>58</b>	<b>60</b>	<b>54</b>	<b>57</b>	<b>61</b>	<b>63</b>	<b>64</b>	<b>79</b>	<b>69</b>	<b>63</b>	<b>61</b>	<b>60</b>	<b>61</b>	<b>60</b>	<b>59</b>
Housing Board, Baddi	6AM-2PM	65	106	95	82	78	86	72	82	65	85	71	81	94	96	97
	2PM-10PM	83	99	134	128	111	131	102	141	91	72	83	98	125	123	108
	10PM-6AM	82	78	121	55	71	86	93	107	74	77	67	90	84	87	72
	<b>24 hour Avg.</b>	<b>77</b>	<b>94</b>	<b>117</b>	<b>88</b>	<b>87</b>	<b>101</b>	<b>89</b>	<b>110</b>	<b>77</b>	<b>78</b>	<b>74</b>	<b>90</b>	<b>101</b>	<b>102</b>	<b>92</b>
MC, Nalagarh	6AM-2PM	68	70	69	72	73	121	68	72	85	64	74	84	58	67	78
	2PM-10PM	98	82	115	95	103	97	94	114	111	76	108	107	99	108	91
	10PM-6AM	82	94	62	74	69	106	65	90	86	65	66	80	77	62	90
	<b>24 hour Avg.</b>	<b>83</b>	<b>82</b>	<b>82</b>	<b>80</b>	<b>82</b>	<b>108</b>	<b>76</b>	<b>92</b>	<b>94</b>	<b>68</b>	<b>83</b>	<b>90</b>	<b>78</b>	<b>79</b>	<b>86</b>
Nehru Park, Manali	6AM-2PM	56	40	37	80	59	59	87	82	79	55	57	57	41	66	49
	2PM-10PM	107	74	43	62	76	58	100	183	134	74	77	70	62	63	--
	10PM-6AM	--	43	12	23	23	26	83	97	66	40	30	27	--	31	--
	<b>24 hour Avg.</b>	<b>82</b>	<b>53</b>	<b>31</b>	<b>55</b>	<b>53</b>	<b>48</b>	<b>90</b>	<b>121</b>	<b>93</b>	<b>56</b>	<b>54</b>	<b>51</b>	<b>52</b>	<b>53</b>	<b>49</b>

ANNEXURE-II (b)																
NO <sub>x</sub> in ug/m <sup>3</sup>																
24 Hour Standard for Industrial, Residential & Others=80 ug/m <sup>3</sup>																
Area and Location	Time of sampling	Pre Diwali Monitoring							Diwali Day	Post Diwali Monitoring						
		20.10.2019	21.10.2019	22.10.2019	23.10.2019	24.10.2019	25.10.2019	26.10.2019	27.10.2019	28.10.2019	29.10.2019	30.10.2019	31.10.2019	01.11.2019	02.11.2019	03.11.2019
Old Bus Stand, Shimla	6AM-2PM	20.1	21.5	16.0	25.6	15.5	25.1	27.4	32.4	17.4	13.3	17.4	16.5	17.4	18.3	16.0
		12.8	34.3	25.6	32.9	29.2	21.0	22.9	30.2	21.9	21.9	21.0	20.6	15.5	14.6	--
	2PM-10PM	20.1	25.6	20.1	22.4	21.5	20.1	29.2	34.7	20.1	11.4	14.2	13.3	17.8	17.4	14.6
		16.9	27.9	19.7	32.4	30.2	26.5	31.1	44.8	23.3	26.5	13.7	13.7	13.3	13.3	11.4
	10PM-6AM	11.0	16.5	21.5	22.4	15.1	16.5	19.7	28.8	15.1	9.6	4.5	4.5	4.5	4.5	4.5
		19.2	11.4	18.3	16.0	17.4	18.7	16.5	23.3	11.4	4.5	4.5	4.5	4.5	4.5	4.5
	<b>24 hour Avg.</b>	<b>16.7</b>	<b>22.9</b>	<b>20.2</b>	<b>25.3</b>	<b>21.5</b>	<b>21.3</b>	<b>24.5</b>	<b>32.4</b>	<b>18.2</b>	<b>14.5</b>	<b>12.5</b>	<b>12.2</b>	<b>12.2</b>	<b>12.1</b>	<b>10.2</b>
Hotel Bridge View, Ridge Shimla	6AM-2PM	24.7	22.9	17.4	13.3	13.3	10.5	4.5	13.7	11.4	9.6	4.5	4.5	4.5	4.5	4.5
		29.7	28.8	25.1	21.9	15.5	9.6	12.8	12.8	13.7	10.5	9.6	11.0	10.1	10.1	--
	2PM-10PM	30.2	17.8	22.4	9.6	14.2	9.1	15.1	21.5	16.0	11.4	9.1	--	9.1	11.9	--
		32.9	29.7	12.8	18.3	18.7	12.3	17.8	26.0	21.0	15.1	10.5	--	9.6	9.1	9.1
	10PM-6AM	20.1	12.3	4.5	16.0	11.4	4.5	10.5	23.8	15.5	4.5	4.5	4.5	4.5	4.5	4.5
		16.9	11.9	4.5	14.2	10.1	4.5	9.6	16.5	14.6	4.5	4.5	4.5	4.5	4.5	4.5
	<b>24 hour Avg.</b>	<b>25.8</b>	<b>20.6</b>	<b>14.5</b>	<b>15.6</b>	<b>13.9</b>	<b>BDL</b>	<b>11.7</b>	<b>19.1</b>	<b>15.4</b>	<b>9.3</b>	<b>BDL</b>	<b>BDL</b>	<b>BDL</b>	<b>BDL</b>	<b>BDL</b>
Parwanoo, Sec-IV	6AM-2PM	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	39.8	15.9	4.5	4.5	4.5	4.5	4.5
		9.2	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	29.8	10.9	4.5	4.5	4.5	4.5
	2PM-10PM	4.5	9.6	4.5	4.5	4.5	9.2	4.5	13.0	36.0	21.4	10.1	4.5	4.5	4.5	4.5
		10.1	4.5	4.5	4.5	9.2	10.9	13.0	31.0	25.1	18.0	11.3	10.9	10.1	4.5	10.1
	10PM-6AM	4.5	4.5	4.5	4.5	4.5	4.5	16.3	36.0	30.2	9.6	4.5	4.5	4.5	4.5	11.3
		4.5	4.5	10.9	4.5	4.5	4.5	18.4	41.1	21.4	9.8	4.5	9.6	9.2	9.6	4.5
	<b>24 hour Avg.</b>	<b>BDL</b>	<b>BDL</b>	<b>BDL</b>	<b>BDL</b>	<b>BDL</b>	<b>BDL</b>	<b>10.2</b>	<b>21.7</b>	<b>30.4</b>	<b>14.3</b>	<b>BDL</b>	<b>BDL</b>	<b>BDL</b>	<b>BDL</b>	<b>BDL</b>



## ANNEXURE-II (b)

Area and Location	Time of sampling	Pre Diwali Monitoring							Diwali Day	Post Diwali Monitoring							
		20.10.2019	21.10.2019	22.10.2019	23.10.2019	24.10.2019	25.10.2019	26.10.2019		27.10.2019	28.10.2019	29.10.2019	30.10.2019	31.10.2019	01.11.2019	02.11.2019	03.11.2019
Regional Office, Sunder Nagar	6AM-2PM	10.9	4.5	13.3	9.0	4.5	13.2	4.5	4.5	12.4	4.5	4.5	4.5	4.5	4.5	4.5	4.5
		4.5	4.5	12.6	10.9	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
	2PM-10PM	4.5	4.5	4.5	14.6	9.5	16.1	4.5	9.0	4.5	4.5	4.5	4.5	4.5	11.4	4.5	10.0
		4.5	4.5	11.8	4.5	4.5	13.2	10.0	11.4	4.5	4.5	4.5	4.5	4.5	10.4	4.5	4.5
	10PM-6AM	4.5	4.5	4.5	4.5	4.5	12.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
		4.5	4.5	4.5	4.5	4.5	15.4	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
	<b>24 hour Avg.</b>	<b>BDL</b>	<b>BDL</b>	<b>BDL</b>	<b>BDL</b>	<b>BDL</b>	<b>12.5</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	9.1	10.1	12.8	13.4	16.5	13.3	14.2	16.9	12.8	15.1	13.3	12.3	11.0	11.9	13.7	
		11.9	16.0	17.8	19.2	21.0	16.0	17.8	22.0	16.9	16.5	14.6	16.0	13.3	14.2	12.8	
	2PM-10PM	15.6	19.2	20.1	21.0	22.0	17.4	19.2	22.9	21.0	19.2	18.3	17.4	15.6	18.3	16.9	
		12.8	16.5	17.4	17.8	18.8	23.8	22.0	23.8	20.1	18.8	17.8	15.1	20.1	16.9	18.3	
	10PM-6AM	14.2	12.8	13.7	16.5	17.8	18.8	17.4	20.1	17.8	15.6	16.9	14.2	12.8	13.7	11.9	
		4.5	11.0	13.3	15.6	12.8	16.5	16.9	17.8	16.5	14.2	12.8	11.9	13.7	11.0	11.4	
	<b>24 hour Avg.</b>	<b>11.3</b>	<b>14.2</b>	<b>15.8</b>	<b>17.2</b>	<b>18.1</b>	<b>17.6</b>	<b>17.9</b>	<b>20.6</b>	<b>17.5</b>	<b>16.5</b>	<b>15.6</b>	<b>14.5</b>	<b>14.4</b>	<b>14.3</b>	<b>14.2</b>	
Trilokpur, Kala Amb	6AM-2PM	11.0	11.9	14.6	12.8	14.6	13.3	11.9	15.1	14.2	12.8	11.0	13.3	11.9	10.1	4.5	
		-	13.3	17.4	18.8	16.9	17.8	12.8	18.8	17.4	18.3	13.3	13.7	12.8	16.5	14.6	
	2PM-10PM	-	12.2	19.2	20.1	17.8	13.3	15.1	22.0	20.1	20.6	15.1	---	15.6	18.8	17.8	
		15.1	11.0	17.8	19.2	18.3	20.1	18.8	23.8	21.0	17.8	21.5	15.2	18.3	12.3	17.4	
	10PM-6AM	12.8	13.7	13.3	16.9	15.1	16.0	14.6	18.3	16.5	14.6	12.8	15.1	13.3	11.0	12.3	
		11.0	10.1	11.9	14.6	12.3	12.8	15.5	16.5	13.3	11.9	14.2	12.3	11.0	12.2	11.9	
	<b>24 hour Avg.</b>	<b>12.5</b>	<b>12.0</b>	<b>15.7</b>	<b>17.1</b>	<b>15.9</b>	<b>15.5</b>	<b>14.8</b>	<b>19.1</b>	<b>17.1</b>	<b>16.0</b>	<b>14.6</b>	<b>13.9</b>	<b>13.8</b>	<b>13.5</b>	<b>13.1</b>	

ANNEXURE-II (b)																	
Area and Location	Time of sampling	Pre Diwali Monitoring							Diwali Day	Post Diwali Monitoring							
		20.10.2019	21.10.2019	22.10.2019	23.10.2019	24.10.2019	25.10.2019	26.10.2019	27.10.2019	28.10.2019	29.10.2019	30.10.2019	31.10.2019	01.11.2019	02.11.2019	03.11.2019	
Regional Office, Una	6AM-2PM	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
	2PM-10PM	9.2	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
		4.5	9.3	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
	10PM-6AM	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
	<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>BDL</b>
Housing Board, Baddi	6AM-2PM	14.7	19.6	14.7	19.6	24.5	19.6	24.5	14.7	19.6	14.7	9.8	19.6	14.7	9.8	9.8	
		24.5	29.4	34.3	29.4	39.2	29.4	34.3	29.4	24.5	19.6	29.4	24.5	29.4	24.5	19.6	
	2PM-10PM	29.4	34.3	39.2	34.3	49.0	39.2	34.3	39.2	34.3	39.2	49.0	39.2	49.0	34.3	34.3	
		39.2	29.4	24.5	39.2	34.3	24.5	49.0	49.0	29.4	29.4	34.3	49.0	34.3	39.2	39.2	
	10PM-6AM	19.6	24.5	19.6	24.5	29.4	29.4	39.2	34.3	19.6	24.5	24.5	29.4	24.5	19.6	24.5	
		9.8	19.6	9.8	14.7	19.6	14.7	19.6	24.5	9.8	9.8	14.7	19.6	19.6	14.7	14.7	
	<b>24 hour Avg.</b>	<b>22.9</b>	<b>26.1</b>	<b>23.7</b>	<b>27.0</b>	<b>32.7</b>	<b>26.1</b>	<b>33.5</b>	<b>31.9</b>	<b>22.9</b>	<b>22.9</b>	<b>27.0</b>	<b>30.2</b>	<b>28.6</b>	<b>23.7</b>	<b>23.7</b>	
MC, Nalagarh	6AM-2PM	14.7	19.6	14.7	9.8	9.8	14.7	14.7	9.8	14.7	9.8	19.6	14.7	9.8	19.6	14.7	
		24.5	29.4	34.3	24.5	24.5	29.4	24.5	24.5	24.5	24.5	19.6	29.4	24.5	14.7	14.7	24.5
	2PM-10PM	34.3	39.2	29.4	34.3	39.2	34.3	29.4	34.3	29.4	34.3	29.4	39.2	39.2	34.3	29.4	39.2
		29.4	34.3	24.5	39.2	34.3	49.0	39.2	49.0	34.3	29.4	34.3	49.0	34.3	34.3	34.3	29.4
	10PM-6AM	19.6	24.5	19.6	24.5	24.5	19.6	34.3	34.3	19.6	24.5	19.6	24.5	19.6	14.7	19.6	
		9.8	14.7	9.8	19.6	19.6	9.8	9.8	19.6	9.8	14.7	14.7	19.6	9.8	9.8	14.7	14.7
	<b>24 hour Avg.</b>	<b>22.1</b>	<b>27.0</b>	<b>22.1</b>	<b>25.3</b>	<b>25.3</b>	<b>26.1</b>	<b>25.3</b>	<b>28.6</b>	<b>22.1</b>	<b>22.9</b>	<b>26.1</b>	<b>27.8</b>	<b>19.6</b>	<b>20.4</b>	<b>23.7</b>	

**ANNEXURE-II (b)**

Area and Location	Time of sampling	Pre Diwali Monitoring							Diwali Day	Post Diwali Monitoring						
		20.10.2019	21.10.2019	22.10.2019	23.10.2019	24.10.2019	25.10.2019	26.10.2019	27.10.2019	28.10.2019	29.10.2019	30.10.2019	31.10.2019	01.11.2019	02.11.2019	03.11.2019
Nehru Park, Manali	6AM-2PM	10.0	13.9	13.6	13.6	9.1	12.8	11.1	10.3	10.9	13.2	9.1	14.6	11.8	11.7	9.5
		15.2	11.8	13.1	13.1	10.6	12.7	11.7	15.0	16.2	15.0	14.4	14.3	15.2	11.9	11.2
	2PM-10PM	12.1	9.2	14.4	14.4	11.0	11.4	13.2	18.7	15.0	4.9	14.1	14.1	10.9	10.9	---
		---	10.4	9.1	9.1	10.9	10.0	15.0	22.8	9.5	12.3	10.9	9.5	11.2	11.8	---
	10PM-6AM	---	8.9	10.0	10.0	4.5	4.5	4.5	10.5	4.5	4.5	4.5	4.5	---	4.5	---
		---	9.2	10.5	10.5	4.5	9.1	4.5	11.8	9.1	4.5	4.5	4.5	---	4.5	---
	<b>24 hour Avg.</b>	<b>12.4</b>	<b>10.6</b>	<b>11.8</b>	<b>11.8</b>	<b>BDL</b>	<b>10.1</b>	<b>10.0</b>	<b>14.8</b>	<b>10.9</b>	<b>9.1</b>	<b>9.6</b>	<b>10.2</b>	<b>12.3</b>	<b>9.2</b>	<b>10.4</b>







**ANNEXURE-II (c)**

Area and Location	Time of sampling	Pre Diwali Monitoring							Diwali Day	Post Diwali Monitoring							
		20.10.2019	21.10.2019	22.10.2019	23.10.2019	24.10.2019	25.10.2019	26.10.2019	27.10.2019	28.10.2019	29.10.2019	30.10.2019	31.10.2019	01.11.2019	02.11.2019	03.11.2019	
Regional Office, Sunder Nagar	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	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	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	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>	<b>BDL</b>
Office Building, Shubkhera, Poanta Sahib	6AM-2PM	2.0	2.0	2.0	2.0	4.1	2.0	2.0	4.7	2.0	4.1	2.0	2.0	2.0	2.0	2.0	
		2.0	4.1	5.1	7.2	5.7	4.7	4.7	6.2	5.1	6.7	2.0	4.1	2.0	2.0	6.2	
	2PM-10PM	2.0	5.7	6.7	8.3	7.2	9.3	10.3	9.8	11.4	7.8	5.7	6.2	4.7	5.1	2.0	
		4.1	2.0	4.1	7.8	6.7	10.3	8.3	12.4	9.3	8.3	6.7	7.2	6.2	5.7	4.1	
	10PM-6AM	2.0	2.0	2.0	4.1	4.7	5.7	7.8	10.3	8.3	6.2	4.7	2.0	4.1	2.0	2.0	
		2.0	2.0	2.0	2.0	2.0	4.1	5.2	6.2	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>5.2</b>	<b>5.1</b>	<b>6.0</b>	<b>6.4</b>	<b>8.3</b>	<b>6.3</b>	<b>5.8</b>	<b>BDL</b>	<b>BDL</b>	<b>BDL</b>	<b>BDL</b>	<b>BDL</b>	
Trilokpur, Kala Amb	6AM-2PM	2.0	2.0	2.0	2.0	2.0	5.1	4.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
		-	2.0	5.1	6.2	4.7	6.7	7.2	6.2	4.1	5.7	4.7	2.0	2.0	4.1	2.0	
	2PM-10PM	-	2.0	6.2	7.2	7.8	8.8	9.3	10.3	8.3	7.2	5.7	-	5.1	4.7	6.2	
		4.7	2.0	5.7	8.3	6.2	9.8	6.7	11.4	9.3	7.8	6.7	2.0	4.7	2.0	4.1	
	10PM-6AM	2.0	2.0	2.0	2.0	4.1	5.7	4.7	5.2	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
		2.0	2.0	2.0	2.0	2.0	4.1	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>4.6</b>	<b>4.5</b>	<b>6.7</b>	<b>5.7</b>	<b>6.2</b>	<b>4.6</b>	<b>4.4</b>	<b>BDL</b>	<b>BDL</b>	<b>BDL</b>	<b>BDL</b>	<b>BDL</b>	





ANNEXURE-II (d)																
RSPM(PM2.5) in ug/m <sup>3</sup>																
24 Hour Standard for Industrial, Residential & Others=60 ug/m <sup>3</sup>																
Area and Location	Time of sampling	Pre Diwali Monitoring							Diwali Day	Post Diwali Monitoring						
		20.10.2019	21.10.2019	22.10.2019	23.10.2019	24.10.2019	25.10.2019	26.10.2019	27.10.2019	28.10.2019	29.10.2019	30.10.2019	31.10.2019	01.11.2019	02.11.2019	03.11.2019
Shimla, Old Bus Stand	24 hour Avg.	30	33	27	16	20	40	42	53	24	20	26	27	26	28	20
Hotel Bridge View, Ridge Shimla	24 hour Avg.	15	12	11	12	13	30	34	39	15	16	19	22	14	15	14
Parwanoo, Sector-IV	24 hour Avg.	20	17	17	20	20	19	37	56	27	24	14	10	9	12	11
Parwanoo, Sector-I	24 hour Avg.	8	15	16	20	19	19	35	56	28	23	11	12	14	12	12
Dari, Dharamshala	24 hour Avg.	16	18	15	9	15	28	31	82	32	29	25	23	25	34	24
Ram Gopal Mandir Damtal	24 hour Avg.	14	16	18	26	32	44	45	46	39	41	39	40	52	50	40
Regional Office, Sunder Nagar	24 hour Avg.	18	28	34	13	15	41	57	75	40	38	34	30	46	41	26
Office Building, Shubkhera, Poanta Sahib	24 hour Avg.	25	34	39	47	49	59	82	97	86	42	51	42	47	58	54
Trilokpur, Kala Amb	24 hour Avg.	7	30	30	45	32	43	48	59	50	34	31	36	27	30	33
Regional Office, Una	24 hour Avg.	25	26	26	25	27	27	28	29	27	25	25	25	24	25	22
Housing Board, Baddi	24 hour Avg.	25	33	33	29	38	33	42	46	29	33	29	33	29	37	33
MC, Nalagarh	24 hour Avg.	33	29	25	33	29	37	25	37	29	25	29	33	25	33	29
Nehru Park, Manali	24 hour Avg.	25	20	23	23	18	27	27	40	25	21	21	21	32	17	39

## 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						
		20.10.2019	21.10.2019	22.10.2019	23.10.2019	24.10.2019	25.10.2019	26.10.2019	27.10.2019	28.10.2019	29.10.2019	30.10.2019	31.10.2019	01.11.2019	02.11.2019	03.11.2019
Old Bus Stand Shimla	6AM-2PM	9.6	16.1	13.2	7.1	6.2	11.8	7.3	5.8	11.0	10.6	14.3	6.2	10.0	5.6	6.7
	2PM-10PM	22.8	19.2	11.6	6.5	8.7	7.9	12.8	17.1	9.7	10.0	7.9	9.7	9.1	11.8	9.5
	10PM-6AM	11.6	9.4	9.3	4.4	5.6	3.8	8.9	13.9	7.7	5.8	6.7	9.0	8.3	7.0	6.5
	<b>24 hour Avg.</b>	<b>14.7</b>	<b>14.9</b>	<b>11.4</b>	<b>6.0</b>	<b>6.8</b>	<b>7.8</b>	<b>9.7</b>	<b>12.3</b>	<b>9.5</b>	<b>8.8</b>	<b>9.6</b>	<b>8.3</b>	<b>9.1</b>	<b>8.1</b>	<b>7.6</b>
Hotel Bridge View, Ridge Shimla	6AM-2PM	13.1	10.3	15.3	5.8	14.5	9.9	7.9	8.5	9.4	5.4	13.3	5.2	8.3	11.8	10.1
	2PM-10PM	31.9	33.8	19.2	21.9	19.8	10.1	18.6	21.3	12.8	7.4	14.6	--	14.8	18.2	16.3
	10PM-6AM	15.4	32.4	13.2	9.8	13.6	9.5	9.0	7.6	7.6	4.9	6.8	8.1	6.5	9.9	8.0
	<b>24 hour Avg.</b>	<b>20.1</b>	<b>25.5</b>	<b>15.9</b>	<b>12.5</b>	<b>16.0</b>	<b>9.8</b>	<b>11.8</b>	<b>12.5</b>	<b>9.9</b>	<b>5.9</b>	<b>11.6</b>	<b>4.4</b>	<b>9.9</b>	<b>13.3</b>	<b>11.5</b>
Parwanoo, Sector-IV	6AM-2PM	0.2	0.2	0.2	0.4	0.3	0.3	0.2	0.5	0.9	0.9	0.6	0.4	0.2	0.6	0.4
	2PM-10PM	0.4	0.4	0.4	0.1	0.6	0.3	0.6	0.9	1.2	1.1	0.8	0.3	0.5	0.4	0.3
	10PM-6AM	0.5	0.4	0.1	0.5	0.7	0.4	0.7	1.7	1.0	1.3	1.1	0.5	0.0	0.5	0.5
	<b>24 hour Avg.</b>	<b>0.4</b>	<b>0.3</b>	<b>0.3</b>	<b>0.3</b>	<b>0.5</b>	<b>0.3</b>	<b>0.5</b>	<b>1.0</b>	<b>1.0</b>	<b>1.1</b>	<b>0.8</b>	<b>0.4</b>	<b>0.2</b>	<b>0.5</b>	<b>0.4</b>
Sector-1, Industrial Parwanoo	6AM-2PM	0.0	0.4	0.0	0.2	0.3	0.0	0.0	0.4	0.7	0.6	0.4	0.6	0.2	0.3	0.4
	2PM-10PM	0.5	0.2	0.3	0.3	0.3	0.4	0.5	1.0	0.9	0.8	0.6	0.3	0.4	0.6	0.2
	10PM-6AM	0.3	0.5	0.5	0.4	0.5	0.5	0.8	1.6	1.1	0.9	0.8	0.5	0.5	0.4	0.1
	<b>24 hour Avg.</b>	<b>0.3</b>	<b>0.4</b>	<b>0.3</b>	<b>0.3</b>	<b>0.4</b>	<b>0.3</b>	<b>0.5</b>	<b>1.0</b>	<b>0.9</b>	<b>0.8</b>	<b>0.6</b>	<b>0.4</b>	<b>0.4</b>	<b>0.4</b>	<b>0.2</b>
Dari, Dharamshala	6AM-2PM	3.1	3.6	1.4	1.8	3.1	1.8	1.9	2.1	2.2	2.4	2.2	1.4	1.4	1.6	1.9
	2PM-10PM	2.2	1.0	2.0	1.0	2.3	2.8	2.9	2.7	2.8	2.0	3.2	2.5	2.5	1.9	2.4
	10PM-6AM	1.7	1.3	3.1	1.4	2.4	1.3	1.2	3.6	3.1	2.9	1.8	1.9	1.8	2.5	1.2
	<b>24 hour Avg.</b>	<b>2.3</b>	<b>1.9</b>	<b>2.2</b>	<b>1.4</b>	<b>2.6</b>	<b>2.0</b>	<b>2.0</b>	<b>2.8</b>	<b>2.7</b>	<b>2.4</b>	<b>2.4</b>	<b>1.9</b>	<b>1.9</b>	<b>2.0</b>	<b>1.8</b>

## ANNEXURE-II (e)

Area and Location	Time of sampling	Pre Diwali Monitoring							Diwali Day	Post Diwali Monitoring						
		20.10.2019	21.10.2019	22.10.2019	23.10.2019	24.10.2019	25.10.2019	26.10.2019	27.10.2019	28.10.2019	29.10.2019	30.10.2019	31.10.2019	01.11.2019	02.11.2019	03.11.2019
Ram Gopal Mandir Damtal	6AM-2PM	2.2	1.8	1.5	1.4	2.7	2.1	3.2	3.2	2.8	2.3	1.8	1.8	2.3	2.1	2.9
	2PM-10PM	2.4	1.8	2.2	0.9	1.9	3.1	2.4	4.0	3.9	3.5	3.1	3.0	2.9	2.9	1.6
	10PM-6AM	1.6	2.7	2.3	2.1	1.4	2.5	2.2	3.7	2.3	1.9	2.7	2.4	2.4	2.6	2.7
	<b>24 hour Avg.</b>	<b>2.1</b>	<b>2.1</b>	<b>2.0</b>	<b>1.5</b>	<b>2.0</b>	<b>2.6</b>	<b>2.6</b>	<b>3.6</b>	<b>3.0</b>	<b>2.6</b>	<b>2.5</b>	<b>2.4</b>	<b>2.5</b>	<b>2.5</b>	<b>2.4</b>
Rgional Office, Sunder Nagar	6AM-2PM	2.0	2.9	3.8	2.5	2.7	3.0	3.2	3.7	3.5	2.9	3.0	2.9	2.9	2.5	2.8
	2PM-10PM	2.6	3.3	4.0	3.2	3.1	3.4	3.8	4.0	3.5	3.3	3.2	3.2	3.3	2.7	3.1
	10PM-6AM	2.2	2.7	2.5	1.8	2.3	2.5	2.7	3.5	2.6	2.5	2.3	2.4	2.2	2.1	2.8
	<b>24 hour Avg.</b>	<b>2.2</b>	<b>3.0</b>	<b>3.4</b>	<b>3.8</b>	<b>2.7</b>	<b>3.0</b>	<b>3.2</b>	<b>3.7</b>	<b>3.2</b>	<b>2.9</b>	<b>2.9</b>	<b>2.8</b>	<b>2.8</b>	<b>2.4</b>	<b>2.9</b>
Office Building, Shubkhera, Poanta Sahib	6AM-2PM	1.1	1.1	1.4	1.2	1.6	1.1	1.2	1.1	1.0	0.9	0.9	0.9	0.9	0.9	0.9
	2PM-10PM	1.6	1.0	1.6	0.9	1.0	1.6	1.5	1.5	1.3	1.2	1.1	1.2	1.1	1.1	1.1
	10PM-6AM	1.7	1.6	1.7	1.4	1.5	1.0	1.1	1.0	1.4	1.4	1.2	1.1	1.0	0.9	0.8
	<b>24 hour Avg.</b>	<b>1.5</b>	<b>1.2</b>	<b>1.6</b>	<b>1.2</b>	<b>1.3</b>	<b>1.2</b>	<b>1.3</b>	<b>1.2</b>	<b>1.2</b>	<b>1.2</b>	<b>1.1</b>	<b>1.1</b>	<b>1.0</b>	<b>1.0</b>	<b>0.9</b>
Trilokpur, Kala Amb	6AM-2PM	1.1	0.7	1.0	1.0	1.2	1.4	1.0	1.8	2.0	1.1	1.1	0.7	0.7	0.7	0.8
	2PM-10PM	1.7	1.2	1.0	1.1	1.4	1.7	1.1	1.3	1.3	1.6	1.4	0.8	1.1	1.1	1.1
	10PM-6AM	1.4	1.3	1.4	1.7	2.2	2.3	1.4	0.6	2.1	2.0	1.9	1.4	1.1	0.9	0.7
	<b>24 hour Avg.</b>	<b>1.4</b>	<b>1.1</b>	<b>1.1</b>	<b>1.3</b>	<b>1.6</b>	<b>1.8</b>	<b>1.2</b>	<b>1.2</b>	<b>1.8</b>	<b>1.5</b>	<b>1.5</b>	<b>0.9</b>	<b>1.0</b>	<b>0.9</b>	<b>0.9</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						
		20.10.2019	21.10.2019	22.10.2019	23.10.2019	24.10.2019	25.10.2019	26.10.2019	27.10.2019	28.10.2019	29.10.2019	30.10.2019	31.10.2019	01.11.2019	02.11.2019	03.11.2019
PCB,Regional Laboratory Shimla	6AM-2PM	0.1	**	0.1	0.1	0.1	0.1	0.2	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.2
	2PM-10PM	0.2	**	0.1	0.2	0.2	0.3	0.4	0.6	0.1	0.3	0.2	0.1	0.2	0.2	0.1
	10PM-6AM	0.2	0.1	0.1	0.2	0.1	0.4	0.4	0.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1
	<b>24 hour Avg.</b>	<b>0.2</b>	<b>0.1</b>	<b>0.1</b>	<b>0.2</b>	<b>0.1</b>	<b>0.3</b>	<b>0.3</b>	<b>0.5</b>	<b>0.1</b>	<b>0.2</b>	<b>0.1</b>	<b>0.1</b>	<b>0.1</b>	<b>0.1</b>	<b>0.1</b>
Parwanoo, Sector-IV	6AM-2PM	0.8	0.8	0.9	0.8	0.7	0.4	0.5	0.7	0.9	0.4	0.4	0.4	0.2	0.2	0.3
	2PM-10PM	0.9	0.9	0.8	0.9	0.9	0.6	0.6	0.9	0.9	0.5	0.5	0.4	0.3	0.3	0.3
	10PM-6AM	0.8	0.9	0.8	0.9	0.8	0.6	0.7	0.9	0.7	0.4	0.4	0.4	0.2	0.3	0.3
	<b>24 hour Avg.</b>	<b>0.8</b>	<b>0.9</b>	<b>0.8</b>	<b>0.9</b>	<b>0.8</b>	<b>0.5</b>	<b>0.6</b>	<b>0.8</b>	<b>0.8</b>	<b>0.4</b>	<b>0.4</b>	<b>0.4</b>	<b>0.3</b>	<b>0.3</b>	<b>0.3</b>
Dari, Dharamshala	6AM-2PM	0.3	0.3	0.3	0.2	0.3	0.4	0.4	0.5	0.4	0.4	0.6	0.4	0.4	0.5	0.5
	2PM-10PM	0.4	0.5	0.5	0.4	0.4	0.7	0.5	0.6	0.5	0.5	0.7	0.6	0.6	0.7	0.6
	10PM-6AM	0.2	0.3	0.3	0.1	0.1	0.3	0.4	0.4	0.3	0.4	0.3	0.2	0.2	0.3	0.3
	<b>24 hour Avg.</b>	<b>0.3</b>	<b>0.4</b>	<b>0.4</b>	<b>0.2</b>	<b>0.3</b>	<b>0.5</b>	<b>0.4</b>	<b>0.5</b>	<b>0.4</b>	<b>0.4</b>	<b>0.5</b>	<b>0.4</b>	<b>0.4</b>	<b>0.5</b>	<b>0.5</b>

**ANNEXURE-II (f)**

Area and Location	Time of sampling	Pre Diwali Monitoring							Diwali Day	Post Diwali Monitoring						
		20.10.2019	21.10.2019	22.10.2019	23.10.2019	24.10.2019	25.10.2019	26.10.2019	27.10.2019	28.10.2019	29.10.2019	30.10.2019	31.10.2019	01.11.2019	02.11.2019	03.11.2019
<b>Sunder Nagar, Regional Office</b>	6AM-2PM	0.2	0.2	0.3	0.2	0.4	0.8	0.7	0.4	0.5	0.7	0.4	0.7	0.7	1.0	1.2
	2PM-10PM	0.2	0.3	0.2	0.4	0.5	0.9	0.7	0.5	0.4	0.7	0.4	0.6	1.0	0.7	1.3
	10PM-6AM	0.1	0.1	0.2	0.3	0.4	1.2	0.7	0.6	0.5	0.5	0.5	0.5	0.7	0.5	1.3
	<b>24 hour Avg.</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.3</b>	<b>0.4</b>	<b>1.0</b>	<b>0.7</b>	<b>0.5</b>	<b>0.5</b>	<b>0.6</b>	<b>0.5</b>	<b>0.6</b>	<b>0.8</b>	<b>0.7</b>	<b>1.3</b>
<b>Office Building, Shubkhera, Poanta Sahib</b>	6AM-2PM	0.3	0.4	--	--	0.2	0.2	0.3	0.9	0.4	0.2	0.5	0.1	0.1	0.4	0.3
	2PM-10PM	0.3	0.4	--	0.1	0.5	0.4	1.2	1.2	0.3	0.6	1.0	0.3	0.3	1.0	0.8
	10PM-6AM	0.6	0.6	--	0.3	0.3	0.9	1.0	1.4	0.4	0.5	0.5	0.3	0.5	0.2	0.4
	<b>24 hour Avg.</b>	<b>0.4</b>	<b>0.5</b>	<b>--</b>	<b>0.2</b>	<b>0.3</b>	<b>0.5</b>	<b>0.8</b>	<b>1.2</b>	<b>0.3</b>	<b>0.4</b>	<b>0.7</b>	<b>0.2</b>	<b>0.3</b>	<b>0.5</b>	<b>0.5</b>



**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						
		20.10.2019	21.10.2019	22.10.2019	23.10.2019	24.10.2019	25.10.2019	26.10.2019	27.10.2019	28.10.2019	29.10.2019	30.10.2019	31.10.2019	01.11.2019	02.11.2019	03.11.2019
<b>Old Bus Stand Shimla</b>	6AM-2PM	11.40	10.30	2.40	7.90	8.20	2.20	2.70	11.30	8.40	14.27	16.65	6.98	8.70	10.10	8.10
		12.40	10.50	3.20	6.00	6.70	1.90	2.10	7.80	6.50	10.31	11.26	4.91	4.80	8.10	--
	2PM-10PM	25.70	20.60	3.50	5.40	5.70	2.40	1.40	4.80	4.90	9.83	9.99	6.50	7.10	7.60	6.30
		11.40	10.30	1.90	4.30	4.30	3.00	2.70	13.20	3.60	11.10	12.05	9.35	6.20	6.00	4.30
	10PM-6AM	11.90	13.00	0.30	3.60	4.60	1.60	1.40	7.50	2.70	9.67	6.18	5.39	3.80	3.80	3.20
		8.60	11.90	0.30	4.30	5.70	1.70	1.70	8.60	2.40	8.40	5.07	3.33	3.30	4.30	2.90
<b>24 hour Avg.</b>		<b>13.60</b>	<b>12.80</b>	<b>1.90</b>	<b>5.30</b>	<b>5.87</b>	<b>2.13</b>	<b>2.00</b>	<b>8.90</b>	<b>4.75</b>	<b>10.60</b>	<b>10.20</b>	<b>6.08</b>	<b>5.70</b>	<b>6.70</b>	<b>4.96</b>
<b>Hotel Bridge View, Ridge Shimla</b>	6AM-2PM	14.10	11.90	5.70	3.80	6.00	1.60	2.10	5.20	3.80	9.35	15.54	7.13	7.80	8.70	7.10
		9.00	8.60	4.00	4.60	4.00	1.40	1.70	6.30	3.50	6.50	8.88	3.17	3.50	5.70	--
	2PM-10PM	10.90	10.30	4.40	5.20	5.70	1.90	1.40	5.40	3.00	6.66	7.45	3.96	3.20	4.60	--
		9.40	10.00	2.70	2.70	3.50	2.20	1.60	7.10	3.00	5.71	16.17	4.91	4.80	5.50	7.60
	10PM-6AM	7.60	8.20	1.10	5.40	5.70	1.10	1.00	4.80	2.40	4.76	5.87	3.33	3.20	3.20	3.30
		7.30	7.00	1.00	3.80	4.40	1.40	1.00	5.50	1.90	3.33	4.60	4.44	3.50	3.00	2.50
<b>24 hour Avg.</b>		<b>9.70</b>	<b>9.30</b>	<b>3.20</b>	<b>4.30</b>	<b>4.88</b>	<b>1.60</b>	<b>1.47</b>	<b>5.70</b>	<b>2.93</b>	<b>6.05</b>	<b>9.75</b>	<b>4.49</b>	<b>4.30</b>	<b>5.10</b>	<b>5.13</b>
<b>Sector-4-Residential Parwanoo</b>	6AM-2PM	0.03	0.03	0.01	0.05	0.06	0.04	0.03	0.07	0.08	0.10	0.04	0.06	0.01	0.03	0.01
		0.03	0.03	0.01	0.05	0.06	0.04	0.03	0.07	0.08	0.10	0.04	0.06	0.01	0.03	0.01
	2PM-10PM	0.04	0.04	0.03	0.07	0.03	0.03	0.07	0.15	0.13	0.07	0.59	0.04	0.03	0.06	0.03
		0.04	0.04	0.03	0.07	0.03	0.03	0.07	0.15	0.13	0.07	0.59	0.04	0.03	0.06	0.03
	10PM-6AM	0.03	0.02	0.01	0.04	0.07	0.04	0.10	0.19	0.14	0.13	0.09	0.08	0.02	0.07	0.04
		0.03	0.02	0.01	0.04	0.07	0.04	0.10	0.19	0.14	0.13	0.09	0.08	0.02	0.07	0.04
<b>24 hour Avg.</b>		<b>0.03</b>	<b>0.03</b>	<b>0.01</b>	<b>0.05</b>	<b>0.05</b>	<b>0.04</b>	<b>0.07</b>	<b>0.13</b>	<b>0.12</b>	<b>0.10</b>	<b>0.24</b>	<b>0.06</b>	<b>0.02</b>	<b>0.05</b>	<b>0.03</b>

**ANNEXURE-II (g)**

Area and Location	Time of sampling	Pre Diwali Monitoring							Diwali Day	Post Diwali Monitoring						
		20.10.2019	21.10.2019	22.10.2019	23.10.2019	24.10.2019	25.10.2019	26.10.2019	27.10.2019	28.10.2019	29.10.2019	30.10.2019	31.10.2019	01.11.2019	02.11.2019	03.11.2019
<b>Sector-1, Industrial Parwanoo</b>	6AM-2PM	0.01	0.02	0.02	0.04	0.01	0.02	0.04	0.06	0.05	0.08	0.05	0.06	0.03	0.09	0.04
		0.01	0.02	0.02	0.04	0.01	0.02	0.04	0.06	0.05	0.08	0.05	0.06	0.03	0.09	0.04
	2PM-10PM	0.03	0.04	0.04	0.08	0.07	0.04	0.06	0.13	0.09	0.09	0.07	0.08	0.02	0.06	0.04
		0.03	0.04	0.04	0.08	0.07	0.04	0.06	0.13	0.09	0.09	0.07	0.08	0.02	0.06	0.04
	10PM-6AM	0.04	0.03	0.04	0.06	0.05	0.07	0.08	0.18	0.12	0.06	0.08	0.05	0.04	0.04	16.00
		0.04	0.03	0.04	0.06	0.05	0.07	0.08	0.18	0.12	0.06	0.08	0.05	0.04	0.04	0.02
<b>24 hour Avg.</b>		<b>0.03</b>	<b>0.03</b>	<b>0.03</b>	<b>0.06</b>	<b>0.04</b>	<b>0.04</b>	<b>0.06</b>	<b>0.12</b>	<b>0.09</b>	<b>0.08</b>	<b>0.07</b>	<b>0.06</b>	<b>0.03</b>	<b>0.07</b>	<b>0.03</b>
<b>Dari, Dharamshala</b>	6AM-2PM	0.30	0.26	0.20	0.37	0.52	0.30	0.28	0.90	0.93	0.88	0.46	0.31	0.60	0.28	0.33
	2PM-10PM	0.30	0.33	0.37	0.17	0.39	0.90	0.87	0.84	0.76	0.83	0.72	0.79	0.70	0.36	0.60
	10PM-6AM	0.20	0.37	0.44	0.31	0.24	0.76	0.70	1.03	1.04	0.95	0.84	0.41	0.38	0.50	0.29
	<b>24 hour Avg.</b>	<b>0.27</b>	<b>0.32</b>	<b>0.34</b>	<b>0.28</b>	<b>0.38</b>	<b>0.36</b>	<b>0.35</b>	<b>0.92</b>	<b>0.91</b>	<b>0.89</b>	<b>0.67</b>	<b>0.50</b>	<b>0.56</b>	<b>0.38</b>	<b>0.41</b>
<b>Ram Gopal Mandir Damtal</b>	6AM-2PM	0.15	0.17	0.61	0.52	0.52	0.93	0.35	0.62	0.55	0.49	0.54	0.49	0.54	0.45	0.65
	2PM-10PM	0.20	0.19	0.14	0.24	0.75	0.73	0.54	1.13	0.99	0.93	0.90	0.80	0.83	0.85	0.41
	10PM-6AM	0.12	0.27	0.29	0.26	0.57	0.83	0.89	1.16	1.09	0.93	0.70	0.64	0.57	0.67	0.67
	<b>24 hour Avg.</b>	<b>0.16</b>	<b>0.21</b>	<b>0.35</b>	<b>0.34</b>	<b>0.61</b>	<b>0.83</b>	<b>0.59</b>	<b>0.97</b>	<b>0.88</b>	<b>0.78</b>	<b>0.71</b>	<b>0.64</b>	<b>0.65</b>	<b>0.66</b>	<b>0.58</b>
<b>Regional Office, Sunder Nagar</b>	6AM-2PM	4.20	4.49	6.00	6.31	2.70	5.41	2.70	7.21	7.86	5.71	4.81	5.41	5.41	6.31	7.81
		6.31	3.52	12.18	7.21	5.11	4.20	6.31	5.11	6.73	3.60	5.71	7.02	5.71	6.91	8.41
	2PM-10PM	7.68	6.09	6.60	8.58	3.21	6.61	5.11	6.31	4.50	4.50	6.31	6.01	6.31	5.71	9.31
		5.71	3.60	4.50	5.41	2.10	4.50	7.21	5.71	5.71	5.10	5.71	3.00	7.21	4.81	7.21
	10PM-6AM	4.81	2.70	4.50	5.11	2.10	3.90	6.01	4.20	4.20	7.21	4.81	5.41	9.01	6.61	6.01
		3.90	2.41	5.70	5.71	3.00	2.41	6.30	5.41	5.41	6.31	7.21	4.81	8.41	5.71	6.31
	<b>24 hour Avg.</b>		<b>3.90</b>	<b>3.80</b>	<b>6.58</b>	<b>6.39</b>	<b>3.04</b>	<b>4.50</b>	<b>5.61</b>	<b>5.66</b>	<b>5.73</b>	<b>5.40</b>	<b>5.76</b>	<b>5.28</b>	<b>7.01</b>	<b>6.01</b>

**ANNEXURE-II (g)**

Area and Location	Time of sampling	Pre Diwali Monitoring							Diwali Day	Post Diwali Monitoring						
		20.10.2019	21.10.2019	22.10.2019	23.10.2019	24.10.2019	25.10.2019	26.10.2019	27.10.2019	28.10.2019	29.10.2019	30.10.2019	31.10.2019	01.11.2019	02.11.2019	03.11.2019
Office Building, Shubkhera, Poanta Sahib	6AM-2PM	0.89	0.93	1.20	1.11	1.32	0.87	0.96	0.99	1.34	1.14	1.19	0.78	0.96	0.78	0.76
		0.89	0.93	1.20	1.11	1.32	0.87	0.96	0.99	1.34	1.14	1.19	0.78	0.96	0.78	0.76
	2PM-10PM	0.93	0.69	0.63	0.74	0.78	0.90	0.88	1.35	1.14	1.08	1.10	0.60	1.11	1.10	0.56
		0.93	0.69	0.63	0.74	0.78	0.90	0.88	1.35	1.14	1.08	1.10	0.60	1.11	1.10	0.56
	10PM-6AM	0.86	0.89	0.98	1.08	1.11	0.69	0.85	1.65	1.20	1.05	1.09	0.93	1.08	1.06	0.89
		0.86	0.89	0.98	1.08	1.11	0.69	0.85	1.65	1.20	1.05	1.09	0.93	1.08	1.06	0.89
	<b>24 hour Avg.</b>	<b>0.89</b>	<b>0.84</b>	<b>0.94</b>	<b>0.98</b>	<b>1.07</b>	<b>0.82</b>	<b>0.90</b>	<b>1.33</b>	<b>1.23</b>	<b>1.09</b>	<b>1.13</b>	<b>0.77</b>	<b>1.05</b>	<b>0.98</b>	<b>0.74</b>
Trilokpur, Kala Amb	6AM-2PM	0.33	0.54	0.79	0.84	0.69	0.93	0.73	0.80	1.32	0.95	0.94	1.22	1.10	0.97	0.96
		0.33	0.54	0.79	0.84	0.69	0.93	0.73	0.80	1.32	0.95	0.94	1.22	1.10	0.97	0.96
	2PM-10PM	2.10	0.79	0.63	0.74	0.59	0.89	0.89	0.96	1.14	0.89	0.89	0.61	1.21	0.86	1.15
		2.10	0.79	0.63	0.74	0.59	0.89	0.89	0.96	1.14	0.89	0.89	0.61	1.21	0.86	1.15
	10PM-6AM	1.14	1.19	1.02	1.08	1.08	1.22	0.97	1.30	1.31	1.20	1.10	0.63	0.64	0.56	0.92
		1.14	1.19	1.02	1.08	1.08	1.22	0.97	1.30	1.31	1.20	1.10	0.63	0.64	0.56	0.92
	<b>24 hour Avg.</b>	<b>1.19</b>	<b>0.84</b>	<b>0.81</b>	<b>0.89</b>	<b>0.79</b>	<b>1.01</b>	<b>0.86</b>	<b>1.00</b>	<b>1.26</b>	<b>1.01</b>	<b>0.98</b>	<b>0.82</b>	<b>0.98</b>	<b>0.80</b>	<b>1.01</b>
Nehru Park, Manali	6AM-2PM	2.51	2.41	4.76	4.76	4.66	5.69	6.20	3.21	4.88	5.24	4.83	3.86	3.04	6.24	2.91
	2PM-10PM	10.51	3.12	5.04	5.04	5.03	5.34	4.29	4.03	4.03	4.73	4.81	5.16	5.46	4.99	---
	10PM-6AM	---	1.21	2.28	2.28	2.90	4.03	2.37	4.90	1.76	3.33	2.28	2.28	---	2.63	---
	<b>24 hour Avg.</b>	<b>6.51</b>	<b>2.25</b>	<b>4.03</b>	<b>4.03</b>	<b>4.20</b>	<b>5.02</b>	<b>4.29</b>	<b>4.05</b>	<b>3.56</b>	<b>4.43</b>	<b>3.98</b>	<b>3.77</b>	<b>4.25</b>	<b>4.62</b>	<b>2.91</b>

## ANNEXURE-III (h)

Date	Old Bus Stand, Shimla																Hotel Bridge View Ridge, Shimla																		
	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	CO ng/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									
											Pb	Ni	As	Al	Ba	Fe										Sr	Pb	Ni	As	Al	Ba	Fe	Sr		
20.10.2019	6.8	16.7	62	30	14.7	0.2	13.60	ND	ND	ND	ND	ND	ND	ND	0.083	ND	0.037	5.9	25.8	29	15	20.1	9.70	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.094	0.07	0.004
21.10.2019	5.9	22.9	73	33	14.9	0.1	12.80	ND	ND	ND	ND	ND	ND	ND	0.050	ND	0.042	5.8	20.6	23	12	25.5	9.30	ND	ND	ND	ND	ND	ND	ND	ND	0.042	ND	0.030	
22.10.2019	BDL	20.2	52	27	11.4	0.1	1.90	ND	ND	ND	ND	ND	ND	ND	0.100	1.690	0.038	BDL	14.5	28	11	15.9	3.20	ND	ND	ND	ND	ND	ND	ND	0.066	1.11	0.041		
23.10.2019	BDL	25.3	46	16	6.0	0.2	5.30	ND	ND	ND	ND	ND	ND	ND	0.082	0.710	0.030	8.3	15.6	33	12	12.5	4.30	ND	ND	ND	ND	ND	ND	ND	0.087	4.16	0.030		
24.10.2019	BDL	21.5	44	20	6.8	0.1	5.87	ND	ND	ND	ND	ND	ND	ND	0.049	ND	0.021	BDL	13.9	27	13	16.0	4.88	ND	ND	ND	ND	ND	ND	ND	0.070	ND	0.041		
25.10.2019	BDL	21.3	73	40	7.8	0.3	2.13	ND	ND	ND	ND	ND	ND	ND	0.076	3.380	0.029	BDL	BDL	53	30	9.8	1.60	ND	ND	ND	ND	ND	ND	ND	0.088	1.89	0.038		
26.10.2019	BDL	24.5	77	42	9.7	0.3	2.00	ND	ND	ND	ND	ND	ND	ND	0.101	3.380	0.042	BDL	11.7	58	34	11.8	1.47	ND	ND	ND	ND	ND	ND	ND	0.075	2.41	0.033		
27.10.2019	6.7	32.4	90	53	12.3	0.5	8.90	ND	ND	ND	ND	ND	ND	ND	0.059	8.390	0.029	5.0	19.1	68	39	12.5	5.70	ND	ND	ND	ND	ND	ND	0.051	4.03	0.025			
28.10.2019	4.1	18.2	48	24	9.5	0.1	4.75	ND	ND	ND	ND	ND	ND	ND	0.093	2.990	0.038	BDL	15.4	31	15	9.9	2.93	ND	ND	ND	ND	ND	ND	ND	0.055	1.69	0.038		
29.10.2019	BDL	14.5	40	20	8.8	0.2	10.60	ND	ND	ND	ND	ND	ND	ND	0.076	7.740	0.034	BDL	9.3	33	16	5.9	6.05	ND	ND	ND	ND	ND	ND	ND	0.080	4.29	0.038		
30.10.2019	BDL	12.5	45	26	9.6	0.1	10.20	ND	ND	ND	ND	ND	ND	ND	0.087	ND	0.044	BDL	BDL	38	19	11.6	9.75	ND	ND	ND	ND	ND	ND	ND	0.097	ND	0.044		
31.10.2019	5.9	12.2	45	27	8.3	0.1	6.08	ND	ND	ND	ND	ND	ND	ND	0.078	ND	0.029	BDL	BDL	41	22	4.4	4.49	ND	ND	ND	ND	ND	ND	ND	0.072	1.24	0.025		
01.11.2019	6.7	12.2	41	26	9.1	0.1	5.70	ND	ND	ND	ND	ND	ND	ND	0.063	3.450	0.029	4.3	BDL	39	14	9.9	4.30	ND	ND	ND	ND	ND	ND	ND	0.042	2.08	0.038		
02.11.2019	7.1	12.1	41	28	8.1	0.1	6.70	ND	ND	ND	ND	ND	ND	ND	0.122	ND	0.025	5.1	BDL	29	15	13.3	5.10	ND	ND	ND	ND	ND	ND	ND	0.064	0.26	0.021		
03.11.2019	5.4	10.2	36	20	7.6	0.1	4.96	ND	ND	ND	ND	ND	ND	ND	0.057	1.760	0.024	BDL	BDL	28	14	11.5	5.13	ND	ND	ND	ND	ND	ND	ND	0.046	0.71	0.200		











ANNEXURE-III (h)																	
Date	Regional Office, Una				Housing Board, Baddi				MC, Nalagarh				Nehru Park, Manali				
	Regulatory Parameters				Regulatory Parameters				Regulatory Parameters				Regulatory Parameters				
	SO2 (ug/m3)	NOx (ug/m3)	PM10 (ug/m3)	PM 2.5 (ug/m3)	SO2 (ug/m3)	NOx (ug/m3)	PM10 (ug/m3)	PM 2.5 (ug/m3)	SO2 (ug/m3)	NOx (ug/m3)	PM10 (ug/m3)	PM 2.5 (ug/m3)	SO2 (ug/m3)	NOx (ug/m3)	PM10 (ug/m3)	PM 2.5 (ug/m3)	NH3 ug/m3
20.10.2019	BDL	BDL	58	25	BDL	22.9	77	25	BDL	22.1	83	33	BDL	12.4	82	25	6.51
21.10.2019	BDL	BDL	60	26	BDL	26.1	94	33	BDL	27.0	82	29	BDL	10.6	53	20	2.25
22.10.2019	BDL	BDL	54	26	BDL	23.7	117	33	BDL	22.1	82	25	BDL	11.8	31	23	4.03
23.10.2019	BDL	BDL	57	25	BDL	27.0	88	29	BDL	25.3	80	33	BDL	11.8	55	23	4.03
24.10.2019	BDL	BDL	61	27	BDL	32.7	87	38	BDL	25.3	82	29	BDL	BDL	53	18	4.20
25.10.2019	BDL	BDL	63	27	BDL	26.1	101	33	BDL	26.1	108	37	BDL	10.1	48	27	5.02
26.10.2019	BDL	BDL	64	28	BDL	33.5	89	42	BDL	25.3	76	25	BDL	10.0	90	27	4.29
27.10.2019	BDL	BDL	79	29	BDL	31.9	110	46	BDL	28.6	92	37	BDL	14.8	121	40	4.05
28.10.2019	BDL	BDL	69	27	BDL	22.9	77	29	BDL	22.1	94	29	BDL	10.9	93	25	3.56
29.10.2019	BDL	BDL	63	25	BDL	22.9	78	33	BDL	22.9	68	25	BDL	9.1	56	21	4.43
30.10.2019	BDL	BDL	61	25	BDL	27.0	74	29	BDL	26.1	83	29	BDL	9.6	54	21	3.98
31.10.2019	BDL	BDL	60	25	BDL	30.2	90	33	BDL	27.8	90	33	BDL	10.2	51	21	3.77
01.11.2019	BDL	BDL	61	24	BDL	28.6	101	29	BDL	19.6	78	25	BDL	12.3	52	32	4.25
02.11.2019	BDL	BDL	60	25	BDL	23.7	102	37	BDL	20.4	79	33	BDL	9.2	53	17	4.62
03.11.2019	BDL	BDL	59	22	BDL	23.7	92	33	BDL	23.7	86	29	BDL	10.4	49	39	2.91