

**IN THE HON'BLE NATIONAL GREEN TRIBUNAL**  
**Principal Bench, New Delhi**

I.A. No. 60 Of 2020

In

**Original Application No.1016 Of 2019**

**In the matter of:-**

**Utkarsh Panwar**

**.....Applicant**

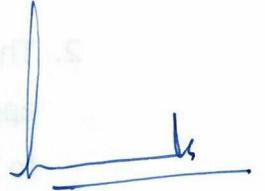
**Versus**

**Central Pollution Control Board & Ors**

**.....Respondent(s)**

**Index**

Sr. no.	Particular	Page No.
1.	<b>Reply</b> of Central Pollution Control Board, Parivesh Bhawan, East Arjun Nagar, Delhi-110032.	



**(S.K. Gupta)**

**Scientist 'E'**

**Central Pollution Control Board**

**Parivesh Bhawan, East Arjun Nagar**

**Delhi-110032.**

**Place: Delhi**

**Dated:13.10.2020**

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**Reply on Behalf of, Central Pollution Control Board to the I.A. Filed by  
the applicant**

**PARAWISE REPLY: -**

- 1.** That the averments contained in **para-1 and 2**, are matter of record and under consideration with Hon'ble NGT. Hence this respondent i.e. Central Pollution Control Board (CPCB) has no comments.
- 2.** That the averments contained in **para-3**, are regarding submission of the applicant saying report of the CPCB as unusable for taking any decision due to alleged errors, inconsistencies and gaps. In this regard CPCB does not agree to the observations of the applicant and clarifications/justifications of various issues raised by the applicant are submitted in the subsequent sections of this affidavit.
- 3.** That in reply to the averments contained in **para- 4 to 7**, it is submitted that emission load of 1000 Kg emission load per brick kiln is not an assumed or theoretical value, but the actually measured value based on the monitoring of brick kilns carried out by CPCB in compliance of the orders of Hon'ble NGT in the matter of O.A. No. 1088/2018; Dinesh Chahal vs. Union of India. CPCB has revisited all the calculations and confirm that these calculations are technically correct.

The data considered in the report submitted to Hon'ble NGT by CPCB , for calculation of emission load, based on the actual monitoring performed by CPCB in the matter of OA No. 1088/2018 ; Dinesh Chahal & Ors. Vs Union of India & Ors., is as follows:

Average stack height: 34 mtr; Average stack diameter: 4 mtr (At the point, where monitoring was done i.e port hole); Flue gas velocity: 4 mtr/Sec (At the point, where monitoring was done i.e. port hole); Ts, K: 325; Ps, mm of Hg: 745; Average O2%: 18.86; Average CO2: 2.10

This issue is further discussed technically in the subsequent Section, in reply to averments made the applicant on the same issue in para 8-13.

**4.** That in reply to the averments contained in **para-8 to 15**, it is submitted that:

- The emission load of 1000 kg/day/per brick kilns considered by CPCB is not an assumed value but measured value based on the stack monitoring of the brick kilns in the Hon'ble NGT matter of O.A. No. 1088/2018; Dinesh Chahal vs. Union of India.
- All the calculations made by CPCB in the report submitted to Hon'ble NGT in this matter are based on the monitoring of the actual current working of the brick kilns during study conducted by CPCB in compliance of the orders of Hon'ble NGT.
- The data considered in the report submitted to Hob'ble NGT by CPCB , for calculation of emission load, based on the actual monitoring performed by CPCB in the matter of OA No. 1088/2018 ; Dinesh Chahal & Ors. Vs Union of India & Ors., is as follows:

Average stack height: 34 mtr; Average stack diameter : 4 mtr (At the point, where monitoring was done i.e port hole); Flue gas velocity : 4 mtr/Sec (At the point, where monitoring was done i.e. port hole); Ts, K: 325; Ps, mm of Hg: 745; Average O2%: 18.86; Average CO2: 2.10

- The CPCB is in agreement with all the standard formulae, equations and examples quoted by the expert hired by the applicant. In response to claim of the applicant that emission load can be simply calculated using the following formula and also that only two variables are required to be known for this purpose i.e. Concentration of PM in stack gases and volume of stack gases:

Emission Load = Concentration of PM in stack gases (mg/Nm<sup>3</sup>)

X

Volumetric flow rate of stack gases

CPCB is of the view that the formula reproduced by the applicant is correct. However, it is important to mention here that to get volumetric flow rate of the stack gases (one of the variable for calculation of emission as highlighted by the applicant), measurement of four other parameters viz. stack diameter, stack area at the point where emissions were monitored, temperature of flue gas, pressure and velocity of flue gases passing through stack during required during stack monitoring.

The flow of flue gas obtained through actual measurement by CPCB during stack monitoring of brick kilns is much higher than claimed by the applicant based on theoretical calculations and previous reports in this regard. CPCB has revisited its calculations and confirm that all the calculations made in the report are technically correct.

In view of the above explanation, comparison of contribution of brick kilns based on such extrapolated emission loads with the values obtained through source apportionment studies, as done by the applicant on Page No, 1569 of the I.A. 60 of 2020, will lead to abnormal and unjustified conclusion. Therefore, the conclusion drawn by the applicant by making such comparison of two different methodologies, is not correct and unjustified.

According to the applicant, the fundamental assumption of 1000 Kg emission/day/brick kiln has affected all aspects of the report submitted by CPCB. It has already been explained in the above sections that this is not assumed value but the actual measured value. The data considered in the report submitted to Hon'ble NGT by CPCB , for calculation of emission load, based on the actual monitoring performed by CPCB in the matter of OA No. 1088/2018 ; Dinesh Chahal & Ors. Vs Union of India & Ors., is as follows:

Average stack height: 34 mtr; Average stack diameter : 4 mtr (At the point, where monitoring was done i.e port hole); Flue gas velocity : 4 mtr/Sec (At the point, where monitoring was done i.e. port hole); Ts, K: 325; Ps, mm of Hg: 745; Average O2%: 18.86; Average CO2: 2.10

The following is the methodology followed to arrive at the outcome of number of brick kilns which can be operated under the available carrying capacity:

For the Months of March-June, 2019:

As per report of CPCB, all the zig-zag type brick kilns were in operation during March-June, 2019. Further, since, for the months of March – June, 2019, there was negative supportive capacity (Emission load in excess of assimilative capacity), we have to calculate the number of brick kilns, which are required to shut to bring the emission

load within the assimilative capacity. The number of brick kilns required to be shut was calculated by dividing the excess load by the emission load of one brick kiln. The number of brick kilns, which can be operated in such cases was determined as follows:

**No. of brick kilns which can be operated** = Total number of Zig-Zag brick kilns Operational in that particular month – (Negative Supportive Carrying Capacity/ Emission Load from one brick Kiln)

Suppose, we have to reduce the emission load by 1000 Kg, to bring the emission load within assimilative capacity, the formula has been used by CPCB in the report:

**No. of brick kiln required to shut = reduction in load required/emission load of one brick kiln**

**No. of brick kiln required to shut = 1000/1000 i.e 1 brick kiln**

So, to reduce the emission load by 1000 Kg, we need to shut only one brick kiln

For the Months of October, 19-February, 20:

As per CPCB's report, the brick kilns were not in operation and CPCB was required to calculate the number of brick kilns which can be operated based on the available Carrying Capacity as per following formula:

**Total number of brick kilns which can be operated:** Supportive Carrying Capacity of the district for a particular month/Emission load from one brick kiln.

Despite no brick kilns in operation during October-February, there was no supportive capacity and hence no brick kilns can be operated irrespective of emission load from brick kilns.

5. That in reply to the averments in **para-16 to 18**, CPCB submits that on the basis of the availability of data and the objective of estimating the number of brick kilns which can be operated without affecting the ambient air quality, the carrying capacity was assessed using ambient air concentration vis a vis PM<sub>10</sub>. It was observed that no carrying capacity was available, where ambient air concentration was exceeding the prescribed standard. Wherever, carrying capacity was available, number of brick kilns, which can be operated, were calculated.

It is also submitted that irrespective of the methodology or the modelling followed, the ambient air carrying capacity of any area will depend on the actual concentration of PM<sub>10</sub> in ambient air environment. Let us take example of Gurugram for the month of April, 2019:

Average PM<sub>10</sub> concentration in Gurugram in April, 2019: 257 ug/m<sup>3</sup>

Standard of PM<sub>10</sub> in the ambient air: 100 ug/m<sup>3</sup>

Now, let us calculate the ambient air carrying capacity of Gurugram w.r.t. PM<sub>10</sub>

Total Load of PM<sub>10</sub> ( In terms of concentration) : 257 ug/m<sup>3</sup>

Assimilative Air Capacity ( In terms of concentration): 100 ug/m<sup>3</sup>

So, the supportive ambient air carrying capacity: Assimilative capacity-Total load

i.e. Supportive carrying Capacity: 100-257 = - 157 ug/m<sup>3</sup>

6. That in reply to the averments in **para-19 to 21**, it is submitted that report prepared by CPCB is in compliance of the orders of Hon'ble NGT, wherein CPCB was directed to submit report based on the available and relevant data. Further, the report of the CPCB is based on the ambient air quality data and not the localized fugitive emission data.

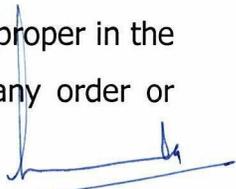
This is also to submit that out of 24 NCR districts, the assessment made by CPCB in 19 districts is based on CAAQMS data. The AOD based data has been used only in 04 districts and for the months, when CAAQMS data was not available. The assessment made and outcome submitted by CPCB for more than 90% of the total brick kilns firing period, is based on CAAQMS data.

It may be mentioned that IIT has carried out a detailed study in collaboration with CPCB, to develop indigenous correlation algorithm for determining ambient PM<sub>2.5</sub> concentration based on aerosol optical depth (AOD) measurement. The study included calibration and validation exercise with 120 CPCB sites that have multi-layer observations. It has been observed that the median error was about less than 5% for PM<sub>2.5</sub> up to 200 µg/m<sup>3</sup> when a comparison of CAAQMS data with AOD data was made.

As such, it is scientifically appropriate to use AOD based data for estimating carrying capacity. It may be pertinent to mention that such tools and techniques including mathematical models may be used for assessing environmental impact, source apportionment, etc.

#### **PRAYER**

In view of the above facts and circumstance as well as the reports filed by the CPCB, it is humbly prayed that the application of the applicant may kindly be dismissed with cost or pass any other further order as this Hon'ble Tribunal may deems fit and proper in the interest of justice. However, this answering Respondent shall abide by any order or directions, if any, passed by this Hon'ble Tribunal.

  
**(S.K. Gupta)**

**Scientist 'E'**

**Central Pollution Control Board**

**Place: Delhi**

**Dated:13.10.2020**

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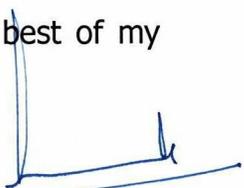
Central Pollution Control Board & Ors

.....Respondent(s)

AFFIDAVIT

I, S.K. Gupta aged about 57 years do hereby solemnly affirm and state as under:

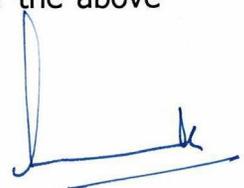
1. That I am Scientist 'E' in the central Pollution Control Board and well conversant with the facts and circumstances of this case and competent to swear this affidavit.
2. That the contents of the reply to the I.A. are true and correct to the best of my knowledge.

  
DEPONENT

VERIFICATION:

116-D  
2020  
Verified at New Delhi on this 13 OCT 2020 day of Oct. 2020, that the contents of the above affidavit are true and correct to the best of my knowledge



  
DEPONENT

CERTIFIED THAT THE DEPONENT  
Shri/Smt./Km. S.K. Gupta  
is a Scientist 'E' in C.P.C.B. Delhi  
Identified by self  
has solemnly affirmed and stated that the contents of the affidavit are true and correct to his/her knowledge.  
13 OCT 2020  
Notary Public-Karkardooma Court, Delhi

13 OCT 2020