

**BEFORE THE NATIONAL GREEN TRIBUNAL
EASTERN ZONAL BENCH KOLKATA
IN**

Original Application No. 182 OF 2024 (EZ)

HAWA

APPLICANT

VERSUS

State of Arunachal Pradesh

RESPONDENT

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Shantanu Kr Dutta

Dr. Shantanu Kr Dutta

Regional Director Shillong

Central Pollution Control Board

Filed through Counsel

Dated: 06.04.2026

Place: Shillong

Dr. Shantanu Kr. Dutta

Regional Director

Central Pollution Control Board

(Ministry of Environment, Forest & Climate Change, Govt. of India)

Regional Directorate - Shillong

BSNL NE - 1 Telecom Circle, CTC Building, Shillong-793001



Shillong Document No. 35
 Date 6.4.2026

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State of Arunachal Pradesh

RESPONDENT

REPLY ON BEHALF OF THE RESPONDENT No. 5: CENTRAL POLLUTION CONTROL BOARD (CPCB)

1. That the present affidavit is being filed on behalf of Respondent No. 5 in compliance with the order dated **25.09.2024** passed by this Hon'ble Tribunal. Thereby, the reply is made in succeeding paragraphs.
2. That, CPCB is a statutory Board constituted under Section 3 of The Water (Prevention and Control of Pollution) Act, 1974. It performs the functions under The Water (Prevention and Control of Pollution) Act, 1974, The Air (Prevention and control of pollution) Act, 1981 and The Environment (Protection) Act, 1986.
3. That pursuant to directions of the Hon'ble Tribunal vide order dated **25.09.2024**, a **Joint Committee** was formed comprising of officials from Arunachal Pradesh State Pollution Control Board, Central Pollution Control Board (CPCB) and District Administration of Govt of Arunachal Pradesh and CPCB participated in the committee visit on 14.11.2024.
4. That, at the outset, it is respectfully submitted that the allegations regarding illegal crusher operations and mining activities in Rupa, West Kameng, Arunachal Pradesh, as stated in the applicant's letter petition, are denied except those specifically admitted by the answering respondent.

REPLY

5. That, the averments made in Para No. 1 of the Hon'ble NGT order dated 25.09.2024 in the Original Application No. 182 OF 2024 (EZ) are introductory in nature and matter of record, hence it attracts no specific reply from this answering respondent as such.
6. That, the averments made in Para No. 2 of the Hon'ble NGT order dated 25.09.2024 are matter of record, hence calls for no comments by this answering respondent.
7. That, the averments made in Para No. 3 of the Hon'ble NGT order dated 25.09.2024 pertains to the allegation of ongoing illegal crusher operations and mining activities and inaction of State administration till date. It is humbly submitted that Joint committee constituted by Hon'ble NGT, wherein, CPCB (i.e. Respondent no. 5) was also a member, had inspected the crusher units under allegation on 14.11.2024 under the jurisdictions of



ADC, Rupa, Dist. West Kameng and the fact-finding report was filed by DC, West Kameng Dist.-Bomdila vide e-mail dated 18.11.2024 (**Annexure-I**).

8. That, the averments made in Para No. 4(1) of the Hon'ble NGT order dated 25.09.2024 relate to the letter petition of the Applicant (HAWA) pertaining to continuing operation of the stone crushers without valid permissions like the grant of Consent to Operate, mining lease, royalty and taxation. It is humbly submitted that Consent to Establish and Consent to Operate pertaining to any industrial activity are granted by the State Pollution Control Board under the provisions of the Water (Prevention and Control of Pollution) Act, 1974 and Air (Prevention and Control of Pollution) Act, 1981 with levying of consent fee.

Granting of Mining lease and licenses are covered under the Mines and Minerals (Development and Regulation) Act, 1957. The State Department of Mines and Geology is the Nodal Authority in the State for dealing with the allotment of mining leases under the Mines and Minerals (Development and Regulation) Act 1957 (MMDR Act 1957) and is entrusted with the enforcement and regulation of mining operations in a State including illegal mining.

9. That, the averments made in Para No. 4(2) of the Hon'ble NGT order dated 25.09.2024 relate to the establishment of the crusher unit adjacent to the main road, allegedly causing noise and air pollution. It is humbly submitted that the Joint Committee constituted by the Hon'ble NGT, wherein CPCB (i.e., Respondent No. 5) was also a member, inspected four (4) crusher units under allegation on 14.11.2024 within the jurisdiction of ADC, Rupa, District West Kameng. As per the fact-finding report submitted by the DC, West Kameng District, Bomdila, the Committee observed that none of the inspected units had a closed conveyor belt system for the transportation of crushed stone chips. The absence of such enclosure systems is a significant factor contributing to fugitive dust emissions, which are a recognized source of air pollution. The committee also highlighted that though water sprinkling systems were installed at the top of the crushing units, the same alone was not sufficient to effectively control airborne particulate matter, particularly during material handling and transportation processes.

In this regard, it is further humbly submitted that the Central Pollution Control Board (CPCB) published the Environmental Guidelines for Stone Crushing Units in July 2023 for the management of pollution from stone crushers (**Annexure-II**) [<https://cpcb.nic.in/openpdffile.php?id=TGF0ZXN0RmlsZS8zNzhfMTY5MDgwNjIxOF9tZWVpYXBob3RvMjM0MjEucGRm>]. These guidelines are to be followed by the stone crushing unit in the State.

10. That, the averments made in Para No. 4(3) of the Hon'ble NGT order dated 25.09.2024 pertain to the allegations of collusion between the administration and the illegal mining mafia.

It is humbly submitted that as this answering respondent, being the Central Govt Agency, does not have any direct role in this and hence calls for no comments by this answering respondent.



11. That, the averments made in Para No. 4(4) of the Hon'ble NGT order dated 25.09.2024 relates to the rapid deforestation occurring due to the mining activities. It is humbly submitted that Joint committee constituted by Hon'ble NGT, wherein, CPCB (i.e. Respondent no. 5) was also a member, had inspected the crusher units (4 nos) under allegation on 14.11.2024 under the jurisdictions of ADC, Rupa, Dist. West Kameng and as per the fact-finding report filed by DC, West Kameng Dist.-Bomdila, the committee did not find any deforestation, as alleged, during the site visit.
12. That, Hon'ble NGT vide order dated 25.09.2024 has directed to constitute a Committee, wherein, CPCB was a member and District Magistrate was appointed as Nodal authority for filling the Inspection report. It is humbly submitted that the order has been complied with and the Committee visited the under allegation on 14.11.2024 under the jurisdictions of ADC, Rupa, Dist. West Kameng and the fact-finding report was filed by DC, West Kameng Dist.-Bomdila vide e-mail dated 18.11.2024 (**Annexure-I**).
13. This answering Respondent seeks liberty to file additional Reply if the same is considered necessary at later stage.
14. That in light of the above submissions, it is respectfully submitted that this answering Respondent i.e. CPCB shall abide by all the order(s) or direction(s) passed by this Hon'ble Tribunal in this original application.

Shantanu Kr Dutta

Dr. Shantanu Kr Dutta
Regional Director Shillong
Central Pollution Control Board

Dr. Shantanu Kr. Dutta
Regional Director
Central Pollution Control Board
(Ministry of Environment, Forest & Climate Change, Govt. of India)
Regional Directorate - Shillong
BSNL NE - 1 Telecom Circle, CTO Building, Shillong-793001



**BEFORE THE NATIONAL GREEN TRIBUNAL
EASTERN ZONAL BENCH KOLKATA
IN**

Original Application No. 182 OF 2024 (EZ)

HAWA

APPLICANT

VERSUS

State of Arunachal Pradesh

RESPONDENT

REPLY ON BEHALF OF THE RESPONDENT No. 5: CENTRAL POLLUTION CONTROL BOARD (CPCB)

AFFIDAVIT

I, Shantanu Kr Dutta, Son of (L) Lalit Chandra Dutta, aged 54 years, having Office at the Regional Directorate- Shillong, Central Pollution Control Board (CPCB), CTO Building (BSNL), Shillong 793 001 do hereby solemnly affirm and sincerely state as follows: -

1. That I, the deponent herein, is authorized representative to represent the Respondent CPCB in the present case, and as such, I am well conversant with the facts and circumstances of the present case on the basis of the information derived from the official records, and hence, I am competent and authorized to verify, sign and swear this affidavit on behalf of the Respondent CPCB.
2. That the accompanying reply may be read part and parcel of the present affidavit as I am competent to swear this affidavit.
3. That the accompanying reply has been drafted and filed under my instructions and authority the contents thereof are true and correct on the basis of the record maintained during ordinary course of business of CPCB and available records and documents and the contents of the same are read over and explained to me and are not repeated herein for the sake of brevity.

IDENTIFIED BY ME

Shantanu Kr
DEPONENT

ADVOCATE

Dr. Shantanu Kr. Dutta
Regional Director
Central Pollution Control Board
(Ministry of Environment, Forest & Climate Change, Govt. of India)
Regional Directorate - Shillong
BSNL NE - 1 Telecom Circle, CTO Building, Shillong-793001



VERIFICATION

Verified at Shillong on this day of Day 06th of April, 2026 that the contents above are correct and true on the basis of the record of the cases as mentioned in the day-to-day affairs of the CPCB. Nothing has been concealed therefrom or mis-stated.

Verified at Shillong on this the 06th of April, 2026.


IDENTIFIED BY ME

Shalini Dey
DEPONENT

ADVOCATE

Dr. Shantanu Kr. Dutta
Regional Director
Central Pollution Control Board
(Ministry of Environment, Forest & Climate Change, Govt. of India)
Regional Directorate - Shillong
BSNL NE - 1 Telecom Circle, CTO Building, Shillong-793001



 सत्यमेव जयते	GOVERNMENT OF ARUNACHAL PRADESH OFFICE OF THE DEPUTY COMMISSIONER WEST KAMENG DISTRICT:: BOMDILA.	DC
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No.BC-50/2024

November 18, 2024.

To

Smti. Koj Rinya, IFS,
 Member Secretary,
 Arunachal Pradesh State Pollution Control Board,
 Naharlagun.

Sub:- Submission of report of Fact Finding Committee in the matter of Application No.182/2024/EZ, Hawa V/s State of A.P.

Ref:- (1) Hon'ble National Green Tribunal Eastern Zone Bench, Kolkotta's Original Application No.182/2024/EZ.
 (2) Member Secy., Arunachal Pr. State Pollution Control Board's Letter No.APSPCB-227/OA No.182/2024/EZ/NGT/4001-04/1820 dated 17-10-2024.

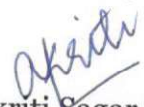
Madam/Sir,

With reference to the above, I would like to inform you that a Fact Finding Committee consisting of the following members has been constituted for verification of the allegations made by the applicant against OA No.182/2024/EZ, Hawa-Vs-State of Arunachal Pradesh:-

- (1) Shri. Anil C. Ranveer, Scientist-E,CPCB.
- (2) Shri. Jumli Kato, Scientist-B, APSPCB.
- (3) Shri. Lobsang Tsetan, ADC, Rupa.

The Committee, after thorough examination and filed inspection, has submitted its report to the undersigned on 18-11-2024 which is submitting herewith for favour of your perusal and further course of action please.

Yours faithfully,


 (Akriti Sagar)IAS
 Deputy Commissioner
 West Kameng District,
 Bomdila.
 Deputy Commissioner
 West Kameng District,
 Bomdila (A.P.)

COMMITTEE REPORT

**IN COMPLIANCE TO HON'BLE NGT, EZ, KOLKATA
ORDER DATED 25.09.2024
IN THE MATTER OF O.A. NO. 182/ 2024
(HAWA V/S STATE OF ARUNACHAL PRADESH)**

**GOVERNMENT OF ARUNACHAL PRADESH,
OFFICE OF THE ADDITIONAL DEPUTY COMMISSIONER,
RUPA, WEST KAMENG DISTRICT.**

[November, 2024]

1. BACKGROUND:

The present Original Application (O.A.) No. 182/ 2024 has been registered by Hon'ble National Green Tribunal (NGT), Eastern Zone Bench (EZ), Kolkata on the basis of a letter petition submitted by the applicant, HAWA sent through E-mail to the office of the Registry, NGT dated 29.06.2024.

Allegation in the letter petition is that there is ongoing illegal crusher operations and mining activities in Rupa area of West Kameng District, Arunachal Pradesh, but no action has been initiated by the State administration till date, as alleged.

The allegations in the letter petition are as under:

- a) These crushers and mining activities have been operating for several years without necessary licenses and tax payments.
- b) The crusher is located adjacent to the main road, causing significant noise and air pollution, which disturbs the mental peace of local residents.
- c) The mining in the Gaehham area of Rupa, West Kameng District, Arunachal Pradesh, exemplifies the collusion between the District Administration and the illegal mining operators.
- d) Rapid deforestation is occurring due to these mining activities, with an adverse effect likely to become evident during the upcoming monsoon season.

Hon'ble NGT, EZ, Kolkata vide order dated 25.09.2024 (copy marked and enclosed as **Annexure-I**) in the matter of O.A. No. 182/2024 (HAWA V/s State of Arunachal Pradesh) issued relevant directions, which is reproduced below:

"... 12. Considering the allegations made, we deem it appropriate to constitute a Committee comprising of the following members:

- i. Senior Scientist, Arunachal Pradesh State Pollution Control Board;*
- ii. Senior Scientist, Central Pollution Control Board;*
- iii. District Magistrate or his representative of Senior rank not below the rank of Additional District Magistrate (ADM)*

13. The District Magistrate shall be the Nodal office for all logistic purposes and for filing the report of the Inspection Committee on affidavit... "

2. Constitution of Committee:

The Competent Authority of Government of Arunachal Pradesh, Rupa, District West Kameng nominated Shri Lobsang Tsetan, APCS, Additional Deputy Commissioner (ADC), Rupa, District West Kameng to represent the Committee. The ADC was made Nodal Officer for compliance of the order.

J Kalla
15.11.24

[Signature]
15/11/24

[Signature]
15.11.24
Addl. Deputy Commissioner
Rupa West Kameng District
Arunachal Pradesh

The competent Authority of CPCB nominated Sh. Anil C. Ranveer, Scientist-E, Regional Directorate North East (RDNE), CPCB, Shillong to represent in the Committee.

The competent Authority of Arunachal Pradesh State Pollution Control Board (APSPCB) nominated Sh. Jumli Kato, Scientist-B, APSPCB, Naharlagun to represent in the Committee.

The Committee constituted comprises of following members:

1. Sh. Anil C. Ranveer Scientist-E, RDNE, CPCB, Shillong.
2. Sh. Jumli Kato, Scientist-B, APSPCB, Naharlagun.
3. Sh. Lobsang Tsetan, APCS, ADC, Rupa, Dist West Kameng.

3. Observations of the Committee:

- i. The Committee noted that, the applicant, HAWA had forwarded the same letter petition i.e. illegal operation of crushing units located in Rupa area to Deputy Commissioner (DC), Bomdila on 29.06.2024. Thereafter, DC Bomdila endorsed the matter to ADC, Rupa for furnishing a factual report.
- ii. In compliance to the complaint received by the office of ADC, Rupa, he issued a Prohibitory Order directing the stone crusher operators to stop the illegal crushing units with immediate effect vide its order dated 03.07.2024 (**Annexure-II**). He further affected joint survey of the all-crushing units for operational status (running, defunct or closed) through Tsering Pentsom, EAC and Yeshi Pema, AMDO.
- iii. All the four crushing units had submitted their response/ reply to the ADC, Rupa during the period from 09.07.2024 to 11.07.2024 stating that they are operating within government norms.
- iv. Thereafter the ADC, Rupa constituted a Committee for sealing of illegal crushing units operational in Rupa area vide order dated 12.07.2024 (**Annexure-III**). The Committee visited all the 4 (four) crushing units and sealed 3 (three) units on the basis of lack of proper/ renewed documents violating the guidelines under "the Arunachal Pradesh Stone Crusher Guidelines-2012" (**Annexure-IV**) vide his order dated 15.07.2024. The ADC, Rupa has submitted a comprehensive visit and sealing report to the Deputy Commissioner, West Kameng district, Bomdila vide report dated 15.07.2024 (**Annexure-V**).
- v. The Deputy Commissioner, West Kameng district, Bomdila issued an order to Mineral Guards for carrying out inspections in regular intervals of the stone crushers sealed by the ADC, Rupa vide order dated 22.07.2024 (**Annexure-VI**).
- vi. The ADC, Rupa forwarded application to the Secretary, Geology and Mining Department, Government of Arunachal Pradesh, recommending to issue NOC for 03 crushing units.

J Kato
15.11.2024

15/11/24

15.11.24
Dred
Addl. Deputy Commissioner
Rupa West Kameng District
Arunachal Pradesh
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- vii. The Committee visited four crushers on 14.11.2024 under the jurisdictions of ADC, Rupa, Dist. West Kameng. The observations of the Committee for crushing units are summarized in following section.

I. M/s Sange Stone Crusher, Rupa.

- The Unit has valid Consent to Operate (CTO) up to 14.07.2025 issued by ASPCB on 30.04.2024 (**Annexure-VII**).
- The display board at the entrance gate was not found during the visit by the Committee.
- At the time of visit, the unit was not in operation.
- The unit has production capacity of 24000 cum per annum of Stone chips, gravels & stone dust as per CTO.
- The owner of the stone crusher, Sh. Sange Dorjee Khrime, informed that the Crusher was established during the year 2019.
- The ADC Rupa issued sealing order on 15.07.2024 for not having NOC from the Geology and Mining Department, Government of Arunachal Pradesh.
- The ADC, Rupa forwarded application of the crushing unit to the Secretary, Geology and Mining Department, Government of Arunachal Pradesh, recommending for issue of NOC vide its letter dated 15.10.2024 (**Annexure-VIII**).
- Water Sprinkling arrangement was found at the top of crushing unit. However, the closed conveyer belt for conveying crushing stones was not observed by the Committee in the premises during the visit.
- The Committee observed that, the unit is located 50m from small/ seasonal nallah, 30m from road and 1.3km from Chug Bridge.
- Deforestation, as alleged in the complaint, was not found by the Committee on its visit.
- Photographs taken during the Committee visit on 14.07.2024 as well as sealing process of 15.07.2024 are enclosed at **Annexure- A**.

II. M/s Thongon Stone Crusher, Rupa

- The Unit has valid Consent to Operate (CTO) up to 22.04.2026 issued by ASPCB on 19.07.2024 (**Annexure-IX**).
- The display board at the entrance gate was not found by the Committee during the visit.
- At the time of visit the unit was not in operation.
- The Unit has production capacity of 80 tonnes per hour (TPH) Stone chips as per CTO.
- The owner of the stone crusher, Sh. Dondu Thongon, informed that the Crusher was established during the year 2019.
- The ADC Rupa issued sealing order on 15.07.2024 for not having NOC from Geology and Mining Department, Government of Arunachal Pradesh.

J Kullo
15.11.2024

[Signature]
15/11/24

[Signature] 11. 24
15. 11.
Page | 4
Addl. Deputy Commissioner
Rupa West Kameng District
Arunachal Pradesh

- The ADC, Rupa forwarded application of the crushing unit to the Secretary, Geology and Mining Department, Government of Arunachal Pradesh, recommending to issue NOC vide its letter dated 29.08.2024 (**Annexure-X**).
- Water sprinkling arrangement was found at the top of crushing unit. However, the closed conveyor belt, for conveying crushed stones, was not found by the Committee in the premises during the visit.
- The Committee observed that, the unit is located 50m from small/ seasonal nallah, 100m from road and 1.5 km from Chug Bridge.
- The deforestation was not observed by the Committee as alleged in the matter.
- Photographs taken during the Committee visit on 14.07.2024 as well as sealing process of 15.07.2024 are enclosed at **Annexure- A**.

III. M/s Firong Traders, Rupa.

- The Consent to Operate (CTO) was valid up to 04.07.2022 issued by ASPCB. (**Annexure-XI**).
- The display board at the entrance gate was not found by the Committee during the visit.
- At the time of visit the unit was not in operation.
- The Unit has production capacity of 24000 cum per annum of stone chips, gravels & stone dust as per CTO.
- The owner of the stone crusher, Sh. Rinchin Khandu, informed that the Crusher was established during the year 2020.
- The ADC Rupa issued sealing order on 15.07.2024 for not having NOC from Geology and Mining Department, Government of Arunachal Pradesh as well as CTO from ASPCB.
- Water Sprinkling arrangement was found at the top of crushing unit. However, the closed conveyer belt for conveying crashing stones was not found by the Committee in the premises during the visit.
- The Committee observed that, the unit is located more than 300m from river, 300m from road.
- The deforestation was not observed by the Committee as alleged in the matter.
- Photographs taken during the Committee visit on 14.07.2024 as well as sealing process of 15.07.2024 are enclosed at **Annexure -A**.

IV. M/s Karma Traders, Rupa

- The Unit has valid CTO up to 21.06.2027 issued by ASPCB on 16.05.2024 (**Annexure-XII**).
- The display board at the entrance gate was not found by the Committee during the visit.
- At the time of visit the unit was not in operation.
- The Unit has production capacity of 6000 cum per annum of Stone chips as per CTO.

J. Kato
15.11.2024

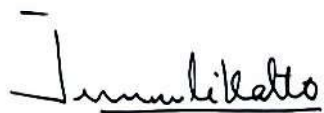
[Signature]
15/11/24

[Signature] 15.11.24
Page 15
Addl. Deputy Commissioner
Rupa West Kameng District
Arunachal Pradesh

- The owner of the stone crusher, Sh. Sange Karma, informed that the Crusher was established during the year 2021.
- The ADC, Rupa forwarded application of the crushing unit to the Secretary, Geology and Mining Department, Government of Arunachal Pradesh, recommending to issue NOC vide its letter dated 21.12.2023 (Annexure-XIII).
- Water Sprinkling arrangement was found at the top of crushing unit. However, the closed conveyer belt for conveying crushing stones was not observed by the Committee in the premises during the visit.
- The Committee observed that, the unit is located more than 500m from river, 300m from road.
- The deforestation was not observed by the Committee as alleged in the matter.
- Photographs taken during the Committee visit on 14.07.2024 as well as sealing process of 15.07.2024 are enclosed at Annexure -A.

4. Recommendations of the Committee:

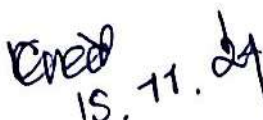
- i. The units may be allowed to operate with valid/proper permissions from concerned departments/authority.
- ii. The crushing units may be directed to install display board at the entrance gate of the units as per order of Hon'ble Supreme Court of India and compliance of the same may be ensure by concerned department/authority.
- iii. The units may be directed to follow the Environmental Guidelines for Stone Crushing Units published by CPCB in the year 2023 and same may be ensure by ASPCB.
- iv. The concerned authority i.e. Geology and Mining Department, Government of Arunachal Pradesh may be directed to process and issue the NOC to the crushing units within the time frame as per Rules.
- v. The units may be directed to use closed conveyor belt system for transportation of crushing stones/chips.
- vi. The units may be directed to provide Personal protective equipments (PPEs) to the workers as per rules.
- vii. The units may be directed to maintain proper house-keeping in the premises.


(Jumli Kato) 15.11.2024
Scientist- B

APSPCB, Naharlagun


(Anil C. Ranveer)
Scientist- E

RDNE, CPCB, Shillong


(Lobsang Tsetan) APCS
Addl. Deputy Commissioner
Rupa, Dist West Kameng
Addl. Deputy Commissioner
Rupa West Kameng District
Arunachal Pradesh

**Environmental Guidelines
for
Stone Crushing Units**



Central Pollution Control Board

Ministry of Environment, Forest and Climate Change

Parivesh Bhawan, East Arjun Nagar

Delhi-110032

(July, 2023)

1.0 Introduction

Stone crushing sector is an important industrial sector engaged in producing crushed stone of various sizes (40 mm.20 mm.10 mm. crushed sand, stone dust etc) depending upon the requirement which acts as raw material for various construction activities.

Stone crushing operation releases a substantial amount of fugitive dust, which not only pollute the environment, but also pose a health hazards to the workers and the surrounding population. The growth in infrastructure is leading to increase in demand of raw materials, thereby resulting in the need to set up new stone crushing units or increase production from existing units. This poses a challenge to maintain the ambient air quality, which is possible if environmental guidelines predetermined by the industry concerned are followed.

Inventory and information about stone crushing units gathered from 27 SPCBs/PCCs (Arunachal Pradesh, Andaman & Nicobar island, Assam, Bihar, Chandigarh, Chhattisgarh, Daman, Dadra & Nagar Haveli, Goa, Gujarat, Haryana, Himanchal Pradesh, Jharkhand, J&K, Karnataka, Kerala, Madhya Pradesh Maharashtra, Manipur, Meghalaya, Mizoram, Nagaland, Odisha, Punjab, Sikkim, Tripura, Uttarakhand), and the data received indicates that there are about 16,931 stone crushing units with capacity ranges between 0.1 TPH to 1,400 TPH.

2.0 Classification of Stone Crushing Units

Based on the information received from SPCBs/PCCs, stone crushers may be classified into small, medium and large-scale in terms of production capacity.

S.No.	Category	Production capacity (TPH)
1.	Small Scale	Up to 25
2.	Medium Scale	26 to 100
3.	Large Scale	100 above

3.0 Stone Crushing Process

The stone crushing process can be broadly divided in following stages:

3.1 Transportation of raw material: Stones extracted from various sources are transported to stone-crushing units by means of trucks, trailers or automatic dumpers.

3.2 Primary crushing: Mined stones are fed directly into the primary crusher through stone feeders. The primary crusher breaks large stones and boulders into 100-140 mm size stones. Crushed stones are sent to secondary crusher for further reduction into smaller sizes. Various types of crushers are used in stone crushing industry. Jaw crushers are widely used as primary crushers.

3.3 Secondary crushing: After primary crushing, crushed stones are fed to secondary crushers through conveyor belts. In this stage, stones are further crushed to a size of 40-60 mm to 10 mm or even smaller. Stone crushing units use different types of crushers for secondary crushing. Granulator or cone crusher is usually used for secondary crushing.

3.4 Screening: From secondary crusher, crushed stones are transferred for screening through a conveyor belt. Screening is the process for segregating products of various sizes. Different mesh size screens are aligned one below the other and each screen is connected to a separate conveyor belt for discharging different size products. Mass that remains on the screen is called 'oversize' and material that passes through screen is called 'under size'. Oversize is returned to secondary crushers for further crushing and then again to screen. Under size is discharged through a 'telescopic chute' and screened products of various sizes are conveyed to stockpiles by belt conveyors. Different types of screens are used such as; grizzly-type screen, vibrating screen and rotary screen. Vibrating screens are most commonly used.

3.5 Tertiary crushing: Tertiary crushing is carried out in units that produce stone dust as their primary product. Dust is usually a by-product of stone crushing process. Units that produce dust, install a separate machine, usually roller crushers. Stones of size 10-20 mm are sent to roller crushers for grinding into fine dust.

3.6 Product storage and loading: After crushing and screening, final product is transferred to a conveyor belt which distributes the product into different stockpiles, depending on size of the product. The product/fines are either stored as stockpiles or directly loaded into trucks & dumpers and transported.

4.0 Environmental issues associated with Stone Crushing Units

The major environmental issue due to operation of a stone crushing unit is fugitive dust emissions which is contributed by the following processes:

- **Primary crushing:** Primary crushers breaks large boulders into smaller sizes. Crushing process as well as unloading of stones generate a substantial amount of fugitive dust. Mechanism for water sprinkling is provided to reduce fugitive dust. Some primary crushing areas are partially or completely covered with a shed as a measure to further prevent the fugitive dust emissions to surroundings, however at some places partial coverings provided which do not appear to be sufficient to such emissions.
- **Secondary crushing:** Compared to primary crushing, fugitive dust emitted at secondary crushing is relatively higher. Generally, insufficient covered shed provided in the process results in fugitive emissions.
- **Screening:** Screening process is also a source of fugitive dust emissions. As the material is conveyed to screen from secondary crusher, screen vibrates and thus, separates the material of different sizes resulting into huge amount of fugitive dust emissions. Generally, units provide covered shed and water sprinklers to combat

dust emissions however, improper design and operation of sprinklers and improper covering is an issue.

- **Tertiary crushing:** Fugitive emissions are generated during grinding of stones into fine dust.
- **Conveyor Belt:** Conveyor belts are primary means of transferring raw materials and products from one end to the other. Movement of products on the conveyor belts is a potential source of fugitive dust emissions. To reduce dust emissions, water sprinkling arrangement is provided on each belt. Some units cover conveyor belts either with sheets or thick cloth to reduce dust emissions.
- **Product release and storage:** Fugitive emissions generated during transfer of material through telescopic chutes is lower than that generating during direct disposal of product on stockpile. Material, such as stone dust, stored in open areas is are also a potential source of fugitive dust emissions.
- Although no process waste water is generated from stone crushing units, however, water is used for sprinkling, conveyed to settling tanks of appropriate size which is recycled and reused in process.

5.0 Environmental Guidelines for Stone Crushing Units

The stone crushing units should adopt following environmental guidelines to prevent/suppress fugitive dust emissions from their operation:

Source of emission	Measures to be Taken
Unloading of raw material for storage	Water sprinkling with adequately designed nozzle which produce tiny droplets of water should be provided during raw materials unloading .
Unloading of raw material into hopper	<ul style="list-style-type: none"> • Three sides and top should be covered and one side may be kept open for vehicular movement. • Water sprinklers should be provided on approach roads.

Primary Crushing/ Jaw Crusher	<ul style="list-style-type: none"> • Crusher should be completely enclosed by G/MS sheets on top and at least three sides completely from the ground level. One side should have provision of movable sheet/door for movement/maintenance. • Primary crushers/jaw crushers should be covered with tarpaulin/cotton cloth/suitable materials to contain fugitive dust emissions (Figure-1) • Water sprinkler system with adequately designed nozzle which produce tiny droplets of water should be provided at primary crusher/jaw crusher so that fugitive emissions are contained and amount of water sprayed should be optimized.
Secondary Crushing	<ul style="list-style-type: none"> • Crusher should be completely enclosed by G/MS sheets on top and at least three sides completely from the ground level. One side should have provision of movable sheet/door for movement/maintenance. • Dry extraction cum bag filter followed by cyclone to be provided for control of emissions.
Screening	<ul style="list-style-type: none"> • Crusher should be completely enclosed by G/MS sheets on top and at least three sides completely from the ground level. One side should have provision of movable sheet/door for movement/maintenance. Door to be kept closed during operation. • Flexible covers where conveyors pass through the screen house should be installed at entries and exits of conveyors to screen house. • Dust extraction system connected with bag filter to be provided. • Provision of water mist sprinkling systems with adequately designed nozzle which produce tiny droplets of water should be made at inlet/outlet of screens.
Tertiary Crushing	<ul style="list-style-type: none"> • Crusher should be completely enclosed by G/MS sheets on top and at least three sides completely from the ground level. One side should have provision of movable sheet/door for movement/maintenance. Dust extraction system connected with bag filter to be provided. • Provision of water mist sprinkling system should be made with adequately designed nozzle which produce tiny droplets of water.

Conveyor Belts	Conveyor belts should be properly covered from node to node with a thick sheet of suitable material along with water sprinkling system with adequately designed nozzle which produce tiny droplets of water.
Discharge points	Flexible Telescopic chute from top of discharge point to the ground level should be provided (Figure-2 & Figure-2(a)).
Product storage	<ul style="list-style-type: none"> • Properly designed telescopic chute of adequate length of suitable material should be provided at ends of conveyor so that dust generated from this section is contained at source. • All open stockpiles for aggregates of size above 5 mm should be kept sufficiently wet by water spraying. • Stockpiles of aggregates of 5 mm size or less should be covered to ensure that same is not carried away (or whipped out) by wind.

5.1 General Measures

- i. Wind breaking wall: GI/MS/brick wall should be provided along the periphery of crusher. Height of the wall should be 3-ft more than the highest node of the crusher.
- ii. Roads: Metaled/concrete roads should be provided within the premises. Ramps and the entire ground area inside the premises should also be metaled.
- iii. Housekeeping: To curb the air pollution in the crusher premises, arrangement of rotating water sprinkling system/fogger/Anti-smog gun should be provided. Water sprinklers should have adequately designed nozzle which produce tiny droplets of water, as such system is more effective in dust control with significant reduction in consumption of water. Fine dust accumulated and bag filters in the crushing area should be cleaned at regular intervals and the collected dust should be stored in sacks for further sale or disposal.
- iv. Plantation: 2-3 rows of tall trees should be planted around the periphery of crusher.
- v. Housing should be open for movement of mechanical drivers, conveyor belts, etc. should be sealed properly with flexible rubber flaps.

- vi. Name of the unit, contact details of the owner and address of the unit, plant capacity and date of issue of CTE/CTO from SPCBs/PCCs should be displayed on the display board at the entrance.
- vii. Transportation: Vehicles carrying any kind of material should be completely covered.
- viii. Regular wetting of roads should be done to suppress dust within the premises to control dust emission re-suspension.
- ix. Water consumption and handling: Unit should provide settling tanks of appropriate size and recycle & reuse of the water in process. Crusher should provide a water storage tank with adequate capacity. In case of use of groundwater, stone crushing unit should obtain permission to extract groundwater from the Central Ground Water Authority (CGWA)/Ground Water Department (GWD) of the State/UT. Unit should maintain proper log book of consumption of fresh water. Depending on availability, efforts may be made to use STP treated water instead groundwater to control emissions from process activities.

6.0 Regulatory/Monitoring Mechanism for Stone Crushing Unit

- i. Stone crushing unit should obtain Consent to Establish (CTE) and Consent to Operate (CTO) from the concerned SPCBs/PCCs.
- ii. Unit while applying for CTO/renewal of consent, should upload the duly filled checklist attached at **Annexure-1** along with digitally tagged photographs and videos of the crushing unit to ensure compliance of the conditions mentioned in the guidelines. SPCBs/PCCs should digitally verify the said conditions before issuance of CTE/CTO/renewal of consent.
- iii. CCTV/PTZ cameras should be installed at the entrance and all corners of the premises of the unit covering entire area with minimum of 30 days data storage.
- iii. Stone crushing unit shall comply with emission norms prescribed under the Environment (Protection) Rules, 1986 and conditions laid down in CTO by concerned SPCB/PCC.

- v. Online/manual ambient air monitoring systems to be installed in crusher zone as per CPCB/SPCB guidelines – in upwind and downwind directions.
- vi. Stone crushing unit should develop green belt as per the plan approved by concerned Department of the State/UT.
- vii. Local authorities should associate with stone crusher associations for the construction of metalled road in the entire crusher zone.
- viii. A District Level Committee should be constituted under chairmanship of District Magistrate/Deputy Commissioner so that surprise inspections for surveillance of stone crushing units located under their jurisdiction can be carried out on regular basis.
- ix. Health survey of workers should be carried out by the stone crusher on half-yearly basis.
- x. New Crushers should be allowed to operate only in dedicated crusher zones as per the siting policies of SPCBs/PCCs.
- xi. Stone crusher unit should be operated only during day time (i.e. 6.00 AM to 10.00 PM) to avoid inconvenience to the nearby residents due to ambient noise.



Figure-1: Covering of Primary/Jaw crusher



Figure-2: Chute from top of discharge point



Figure-2(a): Chute from top of discharge point

Annexure-1

Format/Checklist for SPCBs/PCCs before issuance of CTE & CTO

S. No.	Fugitive Emission Source Locations	Checklist for compliance of conditions of Environmental guidelines	Yes/No
1.	Unloading area of raw material, primary crusher, Screener, conveyors belts and transfer points	Water sprinklers installed with adequate designed nozzles (Upload photo/videos).	
2.	Primary crushers, Secondary crushers, Screeners and tertiary crushers	Enclosures by GI/MS sheets on top and at least three sides completely from the ground level (Upload photo/videos).	
3.	Secondary, Tertiary crushers and Screener	Dry extraction cum bag filter followed by cyclone. (Upload photo).	
4.	Covering of Conveyor belts from node to node with a thick sheet of suitable material	Covering of Conveyor belts (Upload photo).	
4	At discharge points	Flexible Telescopic chute from top of discharge point to the ground level (Upload photo).	
5	GI/MS/brick wind breaking wall of 3-ft more than the highest node of the crusher along the periphery of crusher	Wind breaking wall (Upload photo)	
General			
6.	Wind breaking wall	GI/MS/brick wind breaking wall of 3-ft more than the highest node of the crusher along the periphery of crusher (Upload photo)	
7.	Roads	Metalled/concrete roads within the premises. Ramps and the entire ground area inside the premises should also be metalled	

8.	Suppression of dust within the premises	Arrangement of rotating water sprinkling system/fogger/Anti-smog gun in the premises to suppress dust within the premises to control dust emission re suspension	
9.	Green belt	Plantation of 2-3 rows of tall trees around the periphery of crusher	
9.	Display board	Display board at the entrance, having name of unit, contact details of owner and address of unit, plant capacity and date of issue of CTE/CTO from SPCB/PCC	
10	Covering of vehicles	Covering of vehicles carrying any kind of material .	
11	CCTV/PTZ camera	CCTV/PTZ cameras installed at the entrance and all corners of the premises of the unit covering entire area with minimum of 30 days data storage	
12	Photos/videos	Upload photographs/videos ensuring compliance of all conditions as mentioned in the guidelines while applying CTE/CTO/ Renewal	
