

**BEFORE THE NATIONAL GREEN TRIBUNAL  
SOUTHERN BENCH CHENNAI**

**APPLICATION NO. 12 OF 2020 (SZ)**

**IN THE MATTER OF:**

Tribunal on its own motion *SUO MOTU* Based on the News :APPLICANT(S)  
Item in Mathrubhumi Malayalam Newspaper dated 19.01.2020,  
"The removal of debris in Maradu not according to Norms – The  
National Green Tribunal"

*Versus*

The Chief Secretary, Kerala and Others :RESPONDENT(S)

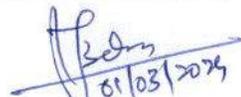
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Place: Bengaluru

Date: 01-03-2024



  
01/03/2024  
**DEPONENT**

**J. Chandra Babu**  
**REGIONAL DIRECTOR**  
**CENTRAL POLLUTION CONTROL BOARD**  
**REGIONAL DIRECTORATE - BENGALURU**  
**(MIN. OF ENV, FOREST & CC, GOVT OF INDIA)**  
**BENGALURU - 560 079. MOB: 9868278903**

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The Chief Secretary, Kerala and Others :RESPONDENT(S)

**REPLY ON BEHALF OF THE 6<sup>th</sup> RESPONDENT: CENTRAL  
POLLUTION CONTROL BOARD (CPCB) & 7<sup>th</sup> RESPONDENT:  
REGIONAL DIRECTORATE OF CENTRAL POLLUTION CONTROL  
BOARD (CPCB) REPRESENTED BY THE REGIONAL DIRECTOR.**

I, Jathikartha Chandra Babu, Son of Late Sh. J Balaramaiah, aged 55 years, having office at the Regional Directorate - Bengaluru, Central Pollution Control Board, 1st and 2nd Floors, Nisarga Bhavan, A-Block, Thimmaiah Main Road, 7th D Cross, Shivanagar, Bengaluru, Karnataka – 560 079, do hereby solemnly affirm and declare as under.

I am presently working as Scientist 'E' & Regional Director, in the Central Pollution Control Board. I am authorised to swear to this affidavit on behalf of the 6<sup>th</sup> and 7<sup>th</sup> Respondent. I am well conversant with the facts of the case and hence, competent and authorised to depose and swear the present Reply Affidavit.



1

  
01/03/2024

J. Chandra Babu  
REGIONAL DIRECTOR  
CENTRAL POLLUTION CONTROL BOARD  
REGIONAL DIRECTORATE - BENGALURU  
(MIN.OF ENV,FOREST & CC, GOVT OF INDIA)  
BENGALURU - 560 079. MOB: 9868278903

1. That, Central Pollution Control Board (hereafter referred to as 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.
2. That it is most respectfully submitted that, Honourable National Green Tribunal vide order dated 30.11.2023 in OA No. 12 of 2020 (SZ) had directed Kerala State Pollution Control Board (hereafter referred to as KSPCB) to impose Environmental Compensation for the improper management of Construction & Demolition waste, generated after the controlled implosion of four high-rise buildings at Maradu Municipality.
3. That it is pertinent to mention here that CPCB was neither a respondent nor a member of the Joint Committee appointed by this Honourable Tribunal or a part of the supervisory committee constituted by the Government of Kerala on the matter relating to the management of Construction & Demolition waste generated subsequent to the controlled implosion of four high-rise buildings at Maradu Municipality. As per the order of the Honourable Tribunal on 04-10-2021, CPCB was impleaded as the 6<sup>th</sup> and 7<sup>th</sup> respondents in the matter, on the ground that, there is no yardstick to assess environmental compensation with respect to violation under Construction and Demolition Waste Management Rules, 2016.
4. That the kind attention of the Honourable Tribunal is sought towards the fact that KSPCB earlier submitted a report dated 30-03-2023 before Honourable NGT (SZ), Chennai on the calculation of Environmental Compensation as "NIL" which was not accepted by the Honourable NGT. Further, KSPCB submitted before the Honourable NGT (SZ), Chennai that they shall seek CPCB assistance for the re-assessment of the Environmental Compensation (EC) in respect of the management of C & D Waste resulted from the demolition of four high-rise buildings in Maradu, Kochi, Kerala in compliance to Honourable Apex Court orders.

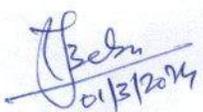


*J. Chandra Babu*  
30/10/2024

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5. That it is further submitted that KSPCB had sought the said guidance vide its letter dated 26-07-2023. Thereafter, CPCB held online meetings with the officials of KSPCB, officials of Maradu Municipality, and the legal counsel of the local body. In the online meeting held on 21-09-2023, CPCB reviewed the issues relating to the disposal of C & D waste generated from the demolition of four high-rise buildings in Maradu, Kochi, Kerala. Minutes of the meeting is enclosed as **Annexure: R6-1**. CPCB further sought clarifications from KSPCB and Municipality, especially on aspects which include (i) total quantum of C&D waste generated (ii) details of phased disposal of waste (iii) agency entrusted with disposal (iv) compliance verification details (v) total cost of disposal (vi) cost recovered from violators (vii) details of monitoring done during the demolition (viii) ambient air quality, surface water quality & meteorological data during the demolition (ix) photographs taken during demolition, disposal and processing of waste. A letter in this regard was forwarded to KSPCB and is annexed as **Annexure: R6-2**. As there were several gaps in the information provided, CPCB requested KSPCB & Maradu Municipality on the details specifically regarding C & D waste management. Subsequent meetings were also conducted with KSPCB to discuss on the shortfalls observed in the data/ information provided. However, evidence for the scientific disposal of C & D waste in accordance with the C & D Waste Management Rules, 2016 could not be provided either by KSPCB or Maradu Municipality. Based on the information/ data provided by KSPCB and Maradu Municipality, CPCB prepared a detailed illustration of EC calculation (**Annexure: R6-3**) which was forwarded to KSPCB for further necessary actions.
6. That the improper disposal of demolition waste by Maradu Municipality was also pointed out in Report No. 9 of the year 2022 - Report of the Comptroller and Auditor General (CAG) of India on Waste Management in Urban Local Bodies. Under section 5.4.3 (page 68-69) of Chapter V – Management of Plastic Waste, Biomedical Waste, E-Waste and Construction and Demolition Waste (**Annexure: R6-4**); CAG of India observed the following: *"Audit noticed that the agreement executed between the ULB and selected agency did not specify the locations to which the waste was to be*

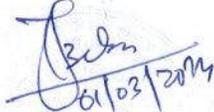


  
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transported or the proposed method for reuse/ recycle/ disposal of waste. Consequent upon receipt of direction from NGT Monitoring Committee, the agency submitted a plan of action indicating 11 sites in Ernakulam and Alappuzha districts to which waste would be transported. Though Maradu Municipality stated that major part of the demolition waste (37,441 tonnes) was transported to Kumbalam and Varapuzha Grama Panchayats and KSIDC, Pallippuram, the GPs/ KSIDC replied to Audit that they had not given any sanction to the agency for dumping of demolition waste in their jurisdictional area. No records were furnished to Audit by the ULB/ agency in proof of the quantum of waste transported to the locations cited or method of processing and disposal of the massive quantity of the C&D waste resulting from the first major demolition activity undertaken in the State”.

7. The above observations reveal that there have been violations of provisions of Rule 6 of the Construction and Demolition Waste Management Rules, 2016. There are no records available with the Municipality on the safe disposal/ proper reprocessing of the C&D waste as per the provisions of the Construction and Demolition Waste Management Rules. In the above circumstances, the entire quantity of waste (69,606 tonnes) was considered as illegally disposed of in violation of the provisions stipulated under section (6) of the Duties of Local Authority as in the Construction and Demolition Waste Management Rules, 2016. The post-demolition debris management was done in violation of the Guidelines on Environmental Management of Construction & Demolition (C&D) Wastes (Prepared by CPCB in compliance of Rule 10 sub-rule 1(a) of C&D Waste Management Rules, 2016). Accordingly, CPCB prepared a detailed illustration of EC calculation (**Annexure: R6-3**) based on the methodology illustrated in the CPCB Report in the matter of OA No. 49/2019 (WZ) and submitted it to the KSPCB.
8. That it is humbly submitted that KSPCB submitted a report on 27-01- 2024 with an estimated EC of Rs. 78.05 lakhs. Following observations have been made by this Respondent i.e. CPCB on the estimation of EC by KSPCB in this regard: i) KSPCB has directly applied the formula for environmental compensation for improper

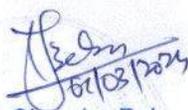


  
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management of solid waste as mentioned in 'Report of the CPCB In-house Committee on Methodology for Assessing Environmental Compensation and Action Plan to Utilize the Fund'. However, for Construction and Demolition waste, factors specific to the C&D waste management facilities (Capital cost and O & M cost) are to be considered, as applied in the case of OA No. 49/2019 (WZ). ii) KSPCB has considered that 10456.5 tonnes of C&D waste generated from the demolition activity under reference was disposed of as per the Construction and Demolition waste rules at Madavana, Irumpanam, Palluruthy, Maalikapeedika and Varapuzha, thus the C & D waste quantity (69606 - 10456.5) = 59149.5 tonnes has been considered for EC estimation. It was contended that the generated C & D waste was disposed of by the service provider in the above locations and was utilized for purposes like landfilling, raising the elevation of the terrain for the construction of roads, construction of culverts, etc. It was also claimed that the waste disposal at the sites was done under the supervision of the concerned District Offices of KSPCB and the letters in this regard, received from the District offices are attached as **Annexure I** in the KSPCB report dated 27-01-2024. However, this information was not shared earlier with CPCB for the purpose of illustration of EC calculation. iii) KSPCB has taken duration of violation as 158 days only.

9. In view of above, it may be noted that CPCB has already illustrated that the EC formula can be appropriately modified to assess the EC with respect to the violations under the provisions of the Construction and Demolition Waste Management Rules, 2016 as in the matter of OA No. 49/2019 (WZ). The EC calculation illustrated by CPCB has considered a scenario of C & D waste management. However, KSPCB has directly applied the formula for environmental compensation for improper management of solid waste as mentioned in 'Report of the CPCB In-house Committee on Methodology for assessing Environmental Compensation and Action Plan to Utilize the Fund' on the grounds that the EC illustration of CPCB is not appropriate as it adopted values from another report and there exists a different scenario in the case of Maradu Municipality. But, with reference to the report dated 18-01-2021 submitted by the two-member Joint Committee in which CPCB was a committee member in the



  
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matter of Sarang Yadwadkar and others Vs. Pune Municipal Corporation and others in the O.A. No. 49 of 2019 (WZ), it is stated that the formula used in said report may be followed here as it has been modified to calculate the EC for violation from construction and demolition activities instead of taking the simplified formula where the assumptions had been considered on the basis of solid waste management. As there is no C&D waste processing facility under the jurisdiction of Maradu Municipality and not even Kochi City Corporation, formula and data for 'Marginal Average Cost for Waste Management' and 'Marginal Average O&M Cost' considered in the methodology adopted in the report dated 18-01-2021 in the O.A. No. 49 of 2019 (WZ) have been considered here for estimation of EC in the present matter.

10. KSPCB has considered that 10456.5 tonnes of waste were disposed of as per the C & D Rules, 2016 under their supervision. But, there are no reports, information, indicating that, the remaining quantum of C & D waste (i.e., 69606 - 10456.5 = 59149.5 tonnes) is managed as per Rules within the period of 158 days. Thus the number of days of violation may not be taken as 158 days while estimating the EC and actual days of violation is deemed to be continuing till date. As per CPCB illustration earlier while estimation was made by CPCB for assisting KSPCB the total number of days of violation was 1361 days as on 27-11- 2023 (Considering activities were disrupted for 54 days due to COVID pandemic lock downs in three phases from 25-03-2020 to 17-05- 2020). Now, the number of days of violation till date (27-02- 2024) be 1453 days considering the activities disrupted for 54 days due to COVID pandemic lock downs. Thus, the calculated EC applicable as on 27-2-2024 would be **Rs. 411.63 Lakhs (Rupees Four crore, eleven lakhs sixty-three thousand only)**. Calculation details are given at **Annexure: R6-5**. However, the order date of Honourable NGT may be considered as the last day of violation and accordingly, EC may be deposited by the Local Authority.



*J. Chandra Babu*  
01/03/2024

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Hence, it is respectfully prayed that, this Hon'ble Tribunal may pass order as deems fit and proper in the facts of this case in the cause of justice. Additionally, it is also humbly submitted that the Respondent 6 & 7 will abide by all the orders and directions issued by this Hon'ble Tribunal in the instant matter.

Dated at Bengaluru on this the 1<sup>st</sup> day of March, 2024.

**COUNSEL FOR  
6<sup>th</sup> & 7<sup>th</sup> RESPONDENT**

**DEPONENT**

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REGIONAL DIRECTOR  
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**VERIFICATION**

I, Jathikartha Chandra Babu, working as Scientist 'E' and posted as Regional Director (Bengaluru), Central Pollution Control Board, the 6<sup>th</sup> & 7<sup>th</sup> respondent herein does hereby verify that the contents of the above paragraphs are true and correct to the best of my knowledge, information and belief.

Dated at Bengaluru on this the 1<sup>st</sup> day of March, 2024.

**COUNSEL FOR  
6<sup>th</sup> & 7<sup>th</sup> RESPONDENT**



**DEPONENT**

J. Chandra Babu  
REGIONAL DIRECTOR  
CENTRAL POLLUTION CONTROL BOARD  
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**MEETING MINUTES (21-09-2023)**

Meeting title	<i>Meeting with Kerala State Pollution Control Board officials regarding the assessment / calculation of environmental compensation in the matter of OA No. 12/2020.</i>
Sequence	Meeting # 01
Date	21 <sup>st</sup> September, 2023
Time	10.45 to 11.20 hrs. IST
Platform/ Venue	Online meeting via 'Google Meet'
Meeting link (online)	<a href="https://meet.google.com/drp-rbrj-avi">https://meet.google.com/drp-rbrj-avi</a>
Meeting facilitator	Kerala State Pollution Control Board, HO, Thiruvananthapuram & CPCB, Regional Directorate, Bengaluru, Karnataka.
List of attendees/ absentees	ANNEXURE

As instructed by the Regional Director, CPCB, Bengaluru an online meeting was organized by Kerala State Pollution Control Board, HO., Thiruvananthapuram to discuss on the re-assessment/ re-calculation of environmental compensation (EC) on account of Construction & Demolition (C&D) waste management, subsequent to the controlled implosion of four high rise building at Maradu Municipality in Ernakulam, Kerala as per the directions of Honourable Apex Court.

Honourable National Green Tribunal (NGT) directed the joint committee constituted in the aforementioned matter to appraise the C&D waste management and specifically directed to levy environmental compensation if the wastes were not managed properly as per the C & D Waste Management Rules. In response, KSPCB submitted a report that the EC calculated as per the methodology provided by CPCB is 'NIL' as the claimed 69600 Tonnes of C&D waste generated was disposed completely as per the provisions of C&D Waste Management Rules, 2016.

However, Honourable NGT maintained that the EC or the damages due to the demolition and subsequent management of demolition waste cannot be 'NIL' and directed for re-assessment. At this juncture, Kerala Board submitted that, they shall relook into the calculation after seeking assistance from CPCB. Since, CPCB was not involved in the above Honourable NGT

matter, requisite information/ data for the re-assessment of EC needs to be obtained from KSPCB. KSPCB was instructed to arrange an online meeting to get an insight into the calculation already done by the Kerala Board and to gather requisite information/ details for the re-assessment of EC.

Shri. J. Chandra Babu, Regional Director (RD), CPCB, Bengaluru welcomed all officials with the introductory remarks and meeting started by 10.45 AM. Dr. Deepesh, CPCB provided the gist of the matter and Regional Director requested Shri. P K Baburajan, Chief Environmental Engineer (CEE), KSPCB, Regional Office, Ernakulam to provide the chronological events in the aforementioned Honourable NGT matter. CEE provided a brief overview of the matter and present status of the case.

For specific queries on the methodology/ calculation which resulted in 'NIL' compensation and the handling of total quantum of C&D waste generated, it was informed that as per the assessment of KSPCB, there is no gap between the quantity generated and the quantity disposed, thus as per the equation provided by CPCB, the EC was arrived as 'NIL'. It was also appraised that KSPCB conducted air, noise and surface water quality monitoring during the controlled implosion and the data shall be shared with CPCB.

Queries on the total days of violation, phased management of C&D waste and availability of C&D waste management action plan were raised by Shri. Sharandeep, DH, UPC-1, CPCB, Delhi. In response KSPCB official informed that it took 158 days to completely clear the C&D waste generated after the controlled demolition of four high rise buildings and hence, number of violation was taken as 158 days. Regarding the management of waste, it was informed that part of the waste was used to fill low lying area and other part was recycled through stone crushers. It was also informed that an action plan was not made for management of C&D waste.

RD reiterated that, for re-assessment/ re-calculation of EC in this matter, CPCB requires several details and since CPCB was not involved in the matter, KSPCB has to provide all requisite information so that the CPCB can assist KSPCB in calculating the EC. Upon detailed deliberations, following details were requested from Kerala Board:

- 1) *Estimated total quantity of C & D waste generated with justification.*
- 2) *Details of phased disposal of C & D waste along with location details, quantities disposed or stored at temporary storage yards, mode of disposal of generated C & D waste*

- 3) *Agency entrusted with disposal and to verify whether the waste generated was disposed in line with the relevant rules or not.*
- 4) *Total cost spent towards disposal and the cost recovered from the violators if any.*
- 5) *No. of air quality and water quality stations installed around the site under reference with location details*
- 6) *Air Quality Data, Water Quality Data of nearby water body assessed by the Kerala SPCB and meteorological data before, during and after demolition of the referred buildings.*
- 7) *Relevant Photographs taken during the demolitions stage, disposal areas and disposal process.*
- 8) *Any other relevant information/ data.*

KSPCB submitted that they need 2 weeks' time to provide all the details sought by CPCB and CPCB may further require 2 weeks' time to analyse the data/ information to provide necessary assistance to KSPCB for the re-assessment.

It was suggested that KSPCB may instruct their legal counsel to seek further time extension of 4 weeks from Honourable NGT in this regard in the next hearing. Regional Director also suggested that the minutes of the meeting shall be shared with KSPCB legal counsel and CPCB advocate so that proper appraisal shall be given to Honourable NGT.

Meeting ended by 11.20 AM

#### **ANNEXURE (List of Participants)**

- 1) Shri. J Chandra Babu, Regional Director, CPCB, Bengaluru
- 2) Shri. P K Baburajan, Chief Environmental Engineer, KSPCB, Regional Office, Ernakulam
- 3) Shri. Sharandeep, Div. Head & Scientist E, UPC-1, CPCB, Delhi.
- 4) Dr. V Deepesh, Scientist C, CPCB, Bengaluru.
- 5) Shri. Josmon J, Env. Engineer, KSPCB, HO, Thiruvananthapuram.
- 6) Smt. Reshma R, Asst. Env. Engineer, KSPCB, HO, Thiruvananthapuram.
- 7) Shri. Nandlal Kishore, Asst. Engineer, KSPCB, HO, Thiruvananthapuram.
- 8) Smt. Monisha Venu, Asst. Engineer, KSPCB, HO, Thiruvananthapuram.
- 9) Smt. Haripriya, Asst. Engineer, KSPCB, HO, Thiruvananthapuram.



**ANNEXURE: R6-2**  
केन्द्रीय प्रदूषण नियंत्रण बोर्ड

**CENTRAL POLLUTION CONTROL BOARD**

पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय, भारत सरकार  
MINISTRY OF ENVIRONMENT, FOREST & CLIMATE CHANGE, GOVT. OF INDIA

PRIORITY/ URGENT

F.No.CM-13013/9/2021-LAB-RD-BENGALURU-RD

18-10-2023

To

The Member Secretary  
Kerala State Pollution Control Board  
Head Office, Pattom P O  
Thiruvananthapuram  
Kerala.

631

**SUB: Re-assessment of EC calculation in the matter of OA No. 12/2020**

**REF: Minutes of the meeting held on 21-09-2023**

Madam,

This is to inform that Kerala State Pollution Control Board in OA No. 12 of 2020 has submitted in the Honourable NGT (SZ) Chennai that the assistant from CPCB has been sought for re-assessment of the environmental compensation in respect of management of C&D Waste resulted from demolition of four high rise buildings in Maradu, Kochi, Kerala in compliance to Hon'ble Apex Court orders.

Subsequently, with respect to the guidance sought by Kerala SPCB vide letter dated 26-07-2023, CPCB held a meeting with the officials of Kerala SPCB on 21-09.2023 and as per minutes of the meeting, following details were requested from Kerala Board and after considering the details furnished through emails dated 30-09-2023, 05-10-2023 & 06-10-2023, following shortfalls are noticed:

**1) Estimated total quantity of C & D waste generated with justification.**

As per the email dated 30-09-2023 from the RO, KSPCB, Ernakulam, the four unauthorized buildings demolished in accordance with the order of the Honourable Supreme Court of India are (a) Holy Faith H2O, (b) Alfa Serene Twin Towers, (c) Jain Coral Cove and (d) Golden Kayaloram. As reported by the concerned local body, Maradu Municipality, the preliminary estimated quantity of C&D waste is 76300 tonnes. But the actual quantity of debris removed is reported as 69600 tonnes. Though estimated C&D waste is 76300 Tonnes, the detailed justification is not provided. The disposed quantity of debris is reported as 69600 Tonnes and justification for the gap of 6700 Tonnes is not provided.

(Contd)

1/3 11

क्षेत्रीय निदेशालय (बेंगलूरु) : निसर्ग भवन, ए-ब्लॉक, प्रथम एवं द्वितीय तल, तिममय्या रोड, 7-डी मैन, शिवनगर, बेंगलूरु - ५६० ०७९.

**Regional Directorate (Bengaluru)** : " Nisarga Bhawan ", A-Block, 1<sup>st</sup> & 2<sup>nd</sup> Floors, Thimmaiah Road, 7<sup>th</sup> D - Main, Shivanagar, Bengaluru - 560 079.

दूरभाष / Telephone : 080-23233739, 23233827, 23222539, Fax : 080-23234059

ई-मेल / E-mail : zobangalore.cpcb@nic.in

प्रधान कार्यालय : परिवेश भवन, पूर्वी अर्जुन नगर, दिल्ली- ११० ०३२.

**Head Office** : Parivesh Bhawan, East Arjun Nagar, Delhi - 110 032.

दूरभाष / Telephone : 011-43102030, Fax : 22305793, 22307078, 22307079, 22301932, 22304948

ई-मेल / E-mail : cpcb@nic.in वेबसाइट / Website : www.cpcb.nic.in

**2) Details of phased disposal of C & D waste along with location details, quantities disposed or stored at temporary storage yards, mode of disposal of generated C & D waste.**

Details of the transported loads are provided as Annexure 2(a), 2(b) and 2(c). Annexure 2(a) (77.7 Tonnes) and 2(b) (168 Tonnes) are pertaining to the quantity of steel removed and Annexure 2(c) (a letter dated 18-6-2020 from Municipality to District collector) showing the details of the cumulative quantity of concrete debris removed (estimated as 69600 Tonnes) by the service provider. The above annexes are simple truck transportation details with destination and the annexure 2(c) seems to be a rough estimate and are not derived from actual weight (weighing bridge slip) of each load.

**3) Agency entrusted with disposal and to verify whether the waste generated was disposed in line with the relevant rules or not.**

It is furnished that M/s Edifice Engineering & M/s. Vijaya Steels demolished the flats through controlled implosion and separated the debris. The concrete debris was removed by the contracted company M/s. Prompt Enterprises. The steel waste was removed by Vijaya Steels and Edifice Engineering. However, there are no comments from KSPCB on the compliance to relevant rules.

**4) Total cost spent towards disposal and the cost recovered from the violators if any.**

The cost incurred for the demolition of the four buildings is not furnished and The details regarding the financial bid for the removal of debris, the amount recovered by the Maradu Municipality from the agency M/s. Prompt Enterprises towards the disposal of waste generated from the demolition of the buildings and the load removed from the demolition site are furnished as Annexure 4. As per the annexure, municipality recovered (Rs. -1236000) Holy Faith H2O, (Rs. -685000) Alfa Serene Twin Towers, (Rs.-1236000) Jain Coral Cove and (Rs.-356000) Golden Kayaloram from M/s. Prompt Enterprises for the disposal of C&D waste generated from four buildings. However, there are no details on the penalty if any assigned to the realtors/ builders of the project.

**5) No. of air quality and water quality stations installed around the site under reference with location details.**

As per the details received over email, nine ambient air monitoring stations were deployed considering Holy faith and Alfa Serene Twin Tower as a single unit since they were demolished at the same time and other two (Jain Coral Cove and Golden Kayaloram) as individual units. No ambient air monitoring was permitted within 200m radius of the demolished buildings due to safety reasons. For Jain Coral Cove, Ambient Air Quality Monitoring Stations (AAQMS) 1,2 and 3 were located at a distance of 430m, 620m and 280m respectively. For Alpha Tower and H2O Holy Faith, AAQMS 1,2 and 3 were located at a distance of 460m, 500m and 550m respectively. For Golden Kayaloram, AAQMS 1,2 and 3 were located at a distance of 260m, 380m and 250m respectively. Two sampling stations were selected for water quality monitoring in the backwater near Jain Coral Cove and Golden Kayaloram and 3 stations for Holy faith H2O and Alfa Serene Twin Towers. The water monitoring stations were situated at a distance of approximately 150m upstream and downstream of the demolishing site. The monitoring plan was provided in Annexure 5.

(Contd)

**6) Air Quality Data, Water Quality Data of nearby water body assessed by the Kerala SPCB and meteorological data before, during and after demolition of the referred buildings.**

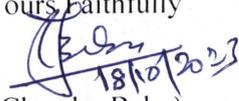
Ambient air quality, water quality and meteorological data provided. There is significant difference in PM values before and during demolition. Regarding water quality, data sets provided but its interpretation by KSPCB is not included.

**7) Relevant Photographs taken during the demolitions stage, disposal areas and disposal process.**

Photographs furnished are without any caption/ description. No detailed photographs on disposal areas and disposal process.

In view of the above, it is requested to clarify the above shortfalls at the earliest and also arrange a meeting through VC on 20-10-2023 at 11.30AM to discuss the issues relating to the subject matter.

Yours Faithfully

  
18/10/2023  
(J.Chandra Babu)  
Regional Director

Copy to

- |                              |                         |
|------------------------------|-------------------------|
| 1. AO to MS, CPCB, Delhi     | : For information       |
| 2. DH, UPC-I                 | : For information       |
| 3. CEE, RO, KSPCB, Ernakulam | : No necessary actions. |

  
18/10/2023  
(J Chandra Babu)

### **Illustration of Environmental Compensation calculation with respect to the Construction & Demolition waste management subsequent to the controlled implosion of four high rise buildings at Maradu Municipality, Ernakulam, Kerala.**

**(OA 12/2020)**

#### **1.0 Background:**

OA No. 12/2020 case has been taken *Suo Motu* by the Honourable National Green Tribunal on 22.01.2020 on the basis of the report published in Mathrubhumi Daily dated 19.01.2020 under the caption of “*The removal of debris in Maradu not according to Norms - National Green Tribunal*” Monitoring Committee Chairman, Justice A.V.Ramakrishna Visits Maradu.” After considering the report of State Level Monitoring Committee (SLMC) and the Joint Committee, Honourable NGT in the order dated 18.03.2020 observed that:

*“Though there was certain direction given by the committee to suppress the air pollution and possible contamination of the Kayal water, no serious steps have been taken either by the Maradu municipality or by the service provider. It appears that Maradu municipality is not interested in carrying out the directions given by the committee, instead they were sticking on to the recommendations made by the technical committee which was appointed by the Government earlier for the purpose of supervising the demolition of the building as directed by the Hon’ble Supreme Court”.*

Central Pollution Control Board (CPCB) was not a party in this matter during the pre- demolition planning, during the demolition and debris management post demolition of the buildings. Based on the submission of Kerala State Pollution Control Board (KSPCB) that there is no yardstick for assessing Environmental Compensation for violations of the provisions of the Construction and Demolition (C&D) Waste Management Rules, 2016 notified under the Environment (Protection) Act, 1986, CPCB was *Suo Motu* impleaded in this matter as per the Honourable NGT order dated 04.10.2021 in the matter along with another connected matter (OA No. 206 of 2021).

CPCB submitted a detailed affidavit on 09.12.2021, that non-compliances with respect to Construction and Demolition Waste Management Rules, 2016 has been dealt in another matter by levying environmental compensation from the defaulters in line with the methodology already adopted for Solid Waste Management. This has already been demonstrated in the report dated 18.01.2021 submitted by the two-member Joint Committee in which CPCB is a committee member

in the matter of *Sarang Yadwadkar and others Vs. Pune Municipal Corporation and others* in the O.A. No. 49 of 2019 (WZ).

Honourable National Green Tribunal directed Kerala State Pollution Control Board (KSPCB) to impose Environmental Compensation for the improper management of Construction & Demolition waste, subsequent to the controlled implosion of four high-rise buildings at Maradu Municipality. KSPCB submitted a report on the calculation of Environmental Compensation as “NIL” which was not accepted by the Honourable NGT, SZ, Chennai. Further, KSPCB submitted before the Honourable NGT, SZ, Chennai that they shall seek CPCB assistance for the re-assessment of the environmental compensation in respect of the management of C&D Waste resulted from demolition of four high rise buildings in Maradu, Kochi, Kerala in compliance to Honourable Apex Court orders.

## **2.0 Action taken by CPCB:**

With respect to the guidance sought by KSPCB vide letter dated 26.07.2023, CPCB held detailed online meetings with the officials of KSPCB, officials of Maradu Municipality and the legal counsel of the local body. In the meeting held on 21.09.2023, CPCB reviewed the issues and sought clarifications from KSPCB and Maradu Municipality. As there were several gaps in the information provided, CPCB specifically requested KSPCB & Municipality the details regarding C&D waste management. Subsequently, another meeting was conducted by KSPCB to discuss on the shortfalls in providing relevant data on 10.11.2023. Based on the details provided by KSPCB and Maradu Municipality following shortfalls were noticed:

<b>1) Estimated total quantity of C &amp; D waste generated with justification.</b>
As per the email dated 30.09.2023 from the Regional Office, KSPCB, Ernakulam, the four unauthorized buildings demolished in accordance with the order of the Honourable Supreme Court of India are (a) Holy Faith H2O, (b) Alfa Serene Twin Towers, (c) Jain Coral Cove and (d) Golden Kayaloram. As reported by the Maradu Municipality, the preliminary estimated quantity of C&D waste is 76300 tonnes. However, the actual quantity of debris removed as per the weekly vehicle log was 69606 tonnes. As per the financial bid document of M/s. Prompt Enterprises, one of the conditions is to ascertain the quantity of debris and the estimate of 76300 Tonnes may be made by the contractor. <i>The municipality has not ascertained the post-demolition C&amp;D waste standard methods engaging experts or agencies.</i>
<b>2) Details of phased disposal of C &amp; D waste along with location details, quantities disposed</b>

**or stored at temporary storage yards, mode of disposal of generated C & D waste.**

A weekly log of vehicle loads prepared by the contractor indicating type of truck, number of loads, cumulative tonnage of waste and place of disposal was provided by the Municipality. The weekly log shows the cumulative quantity of concrete debris removed (69606 Tonnes) by the service provider and disposal methodology adopted at each site was not provided. The log provided is only about the truck transportation details, with destination and it seems to be a rough estimate of tonnage (not derived from the weighing bridge records) of each load. **There are no details available on the temporary stocking yard and mode of ultimate disposals.** There are no action plans prepared by the Municipality anticipating post demolition C&D waste as per the provisions of the rules.

**3) Agency entrusted with disposal and to verify whether the waste generated was disposed in line with the relevant rules or not.**

It is learnt from the reports submitted by the Municipality, M/s. Prompt Enterprises was selected for the removal of debris from the buildings to be demolished. The agency was selected based on the highest bid (Offered Rs. 35,13,000/- all four buildings) for the removal of debris (loading, unloading and conveyance) and there are no conditions for the disposal as per the provisions of the C&D waste rules, 2016. The municipality generated revenue of Rs. 35,13,000/- from the contract to remove debris from the flat locations.

**4) Total cost spent towards disposal and the cost recovered from the violators if any.**

The cost incurred for the demolition of the four buildings is not furnished. The amount received by the Maradu Municipality from the agency M/s. Prompt Enterprises towards the removal of waste (loading, unloading and conveyance) from M/s. Prompt Enterprises is as follows: (Rs. 1236000) Holy Faith H2O, (Rs. 685000) Alfa Serene Twin Towers, (Rs.1236000) Jain Coral Cove and (Rs.356000) Golden Kayaloram. However, there are no details on the penalty if any assigned to the realtors/ builders of the project.

It is presumed that the local authorities selected the highest bidder to remove the debris and there was no intention to comply the provisions of the Construction and Demolition (C&D) Waste Management Rules, 2016 notified under the Environment (Protection) Act, 1986. Later when the lacunas in debris management were highlighted by SLMC and the joint committee, the agency submitted action plan and the observation of the joint committee extracted from page 20 of the Honourable NGT order dated 18.03.2020 is reproduced below:

“Prompt Enterprises who are engaged in the removal of concrete debris has pointed out a site at Kumbalam for setting up C & D waste processing facility. The KSPCB has already issued an authorization vide RULES/VOL.II/17/19 dated 28.01.2019. However, a verification on 09.01.2020 revealed that no such plant is installed and no waste is seen deposited there. On the other hand, Annexure -1(A)(2) in Appendix-X6 reveals that the concrete debris were taken to four other sites viz., Varappuzha, Anachal, Choondamala and Pallipuram”.

The above observation shows that the waste was ill managed and the ultimate disposals were not in accordance to the provisions of the rules. The quantum of C&D waste disposal claims made by the agency and endorsed by the Municipality is tabulated below.

<i>Period</i>	<i>Quantity (MT)</i>	<i>Destination</i>	<i>Claims of Municipality / Agency</i>	<i>Remarks on the disposal/ reprocessing claims</i>
Pre-demolition	<b>11250</b>	Chandiroor, Alleppey.	Road formation and basement filling at Kerala State Industrial Development Corporation (KSIDC) Pallipuram.	<ul style="list-style-type: none"> <li>• KSIDC informed CAG Audit that they had not given any sanction to the agency for dumping of demolition waste in their jurisdictional area.</li> <li>• No proofs furnished by the ULB/ agency in proof of the quantum of waste transported to the locations or method of re-processing or disposal.</li> </ul>
27-01-20 to 06-02-20  <b>Post demolition (Week 1)</b>	<b>10132</b>	Varapuzha  Anachal  KSIDC, Pallipuram  RM Crusher	Road formation and basement filling at KSIDC Pallipuram.	<ul style="list-style-type: none"> <li>• KSIDC informed CAG Audit that they had not given any sanction to the agency for dumping of demolition waste in their jurisdictional area.</li> <li>• Concerned Gram Panchayath Authorities informed CAG Audit that</li> </ul>

		Chundamala Crusher		<p>they had not given any sanction to the agency for dumping of demolition waste in their jurisdictional area.</p> <ul style="list-style-type: none"> <li>• No proofs/ information on the C&amp;D waste processed/ recycled at crushers.</li> <li>• Purpose/ disposal route of waste to other sites not provided.</li> </ul>
07-02-20 to 13-02-20 Post demolition (Week 2)	<b>8032</b>	Varapuzha Anachal KSIDC, Pallipuram RM Crusher Chundamala Crusher Irumpanam Panangad	Road formation and basement filling at KSIDC Pallipuram.	<ul style="list-style-type: none"> <li>• KSIDC informed CAG Audit that they had not given any sanction to the agency for dumping of demolition waste in their jurisdictional area.</li> <li>• Concerned Gram Panchayath Authorities informed CAG Audit that they had not given any sanction to the agency for dumping of demolition waste in their jurisdictional area.</li> <li>• No proofs/ information on the C&amp;D waste processed/ recycled at crushers or used for jetty restoration site at Irumpanam.</li> <li>• Purpose/ disposal route of waste to other sites not</li> </ul>

				provided.
14-02-20 to 21-02-20 Post demolition (Week 3)	<b>8088</b>	Varapuzha  Anachal  KSIDC, Pallipuram  RM Crusher  Chundamala Crusher  Irumpanam  Panangad	Road formation and basement filling at KSIDC Pallipuram.	<ul style="list-style-type: none"> <li>• KSIDC informed CAG Audit that they had not given any sanction to the agency for dumping of demolition waste in their jurisdictional area.</li> <li>• Concerned Gram Panchayath Authorities informed CAG Audit that they had not given any sanction to the agency for dumping of demolition waste in their jurisdictional area.</li> <li>• No proofs/ information on the C&amp;D waste processed/ recycled at crushers or used for jetty restoration site at Irumpanam.</li> <li>• Purpose/ disposal route of waste to other sites not provided.</li> </ul>
22-02-20 to 28-02-20 Post demolition (Week 4)	<b>7772</b>	Varapuzha  Anachal (Malikampeedika)  KSIDC, Pallipuram  RM Crusher	Road formation and basement filling at KSIDC Pallipuram.	<ul style="list-style-type: none"> <li>• KSIDC informed CAG Audit that they had not given any sanction to the agency for dumping of demolition waste in their jurisdictional area.</li> <li>• Concerned Gram Panchayath Authorities informed CAG Audit that they had not given any</li> </ul>

		<p>Chundamala Crusher,</p> <p>Irumpanam</p> <p>Panangad</p> <p>Palluruthy</p> <p>Paravoor</p> <p>Edayar (CMRL)</p>		<p>sanction to the agency for dumping of demolition waste in their jurisdictional area.</p> <ul style="list-style-type: none"> <li>• No proofs/ information on the C&amp;D waste processed/ recycled at crushers, used for jetty restoration site at Irumpanam or at Edayar site.</li> <li>• No proofs furnished by the ULB/ agency in proof of the quantum of waste disposed/ reused in construction.</li> </ul>
<p>29-02-20 to 07-03-20</p> <p>Post demolition (Week 5)</p>	<b>8169</b>	<p>Anachal (Malikampeedika)</p> <p>KSIDC, Pallipuram</p> <p>RM Crusher</p> <p>Chundamala Crusher,</p> <p>Irumpanam</p> <p>Palluruthy</p> <p>Paravoor</p>	<p>Road formation and basement filling at KSIDC Pallipuram.</p> <p>No information on the C&amp;D waste processed/ recycled at crushers. Jetty restoration site at Irumpanam. Purpose of waste to other sites not provided.</p>	<ul style="list-style-type: none"> <li>• KSIDC informed CAG Audit that they had not given any sanction to the agency for dumping of demolition waste in their jurisdictional area.</li> <li>• Concerned Gram Panchayath Authorities informed CAG Audit that they had not given any sanction to the agency for dumping of demolition waste in their jurisdictional area.</li> <li>• No proofs/ information on the C&amp;D waste processed/ recycled at crushers, used for jetty</li> </ul>

				<p>restoration site at Irumpanam, etc.</p> <ul style="list-style-type: none"> <li>• No proofs furnished by the ULB/ agency in proof of the quantum of waste disposed/ reused in construction.</li> </ul>
08-03-20 to 14-03-20 Post demolition (Week 6)	<b>10657</b>	Anachal (Malikampeedika) KSIDC, Pallipuram  RM Crusher  Chundamala Crusher  Kaloor (KMRL site)	Road formation and basement filling at KSIDC Pallipuram. No information on the C&D waste processed/ recycled at crushers. For Metro (KMRL) site at Kaloor. Purpose of waste to other sites not provided.	<ul style="list-style-type: none"> <li>• KSIDC informed CAG Audit that they had not given any sanction to the agency for dumping of demolition waste in their jurisdictional area.</li> <li>• Concerned Gram Panchayath Authorities informed CAG Audit that they had not given any sanction to the agency for dumping of demolition waste in their jurisdictional area.</li> <li>• No proofs/ information on the C&amp;D waste processed/ recycled at crushers, used for jetty restoration site at Irumpanam, etc.</li> <li>• No proofs furnished by the ULB/ agency in proof of the quantum of waste disposed/ reused in construction.</li> </ul>
Work halted due to COVID pandemic from 18-03-2020 and shifting resumed on 12-05-2020.				
12-05-20 to 24-	<b>5506</b>	KSIDC,	Road formation and	<ul style="list-style-type: none"> <li>• KSIDC informed CAG</li> </ul>

05-20 Post demolition (Week 7)		Pallipuram  Edayar  Varapuzha	basement filling at KSIDC Pallipuram. Purpose of waste to other sites not provided.	Audit that they had not given any sanction to the agency for dumping of demolition waste in their jurisdictional area.  <ul style="list-style-type: none"> <li>• Concerned Gram Panchayath Authorities informed CAG Audit that they had not given any sanction to the agency for dumping of demolition waste in their jurisdictional area.</li> <li>• No proofs/ information on the C&amp;D waste used at Edayar.</li> </ul>
Total	<b>69606</b>			

### **3.0 Observations of Comptroller and Auditor General (CAG) of India on Construction & Demolition Waste Management by Maradu Municipality.**

The improper disposal of demolition waste was pointed out in the Report No. 9 of the year 2022 - ***Report of the Comptroller and Auditor General (CAG) of India on Waste Management in Urban Local Bodies.*** Under section 5.4.3 (page 68-69) of Chapter V – Management of Plastic Waste, Bio-medical Waste, E-Waste and Construction and Demolition Waste, CAG of India observed the following:

*“Audit noticed that the agreement executed between the ULB and selected agency did not specify the locations to which the waste was to be transported or the proposed method for reuse/recycle/disposal of waste. Consequent upon receipt of direction from NGT Monitoring committee, the agency submitted a plan of action indicating 11 sites in Ernakulam and Alappuzha districts to which waste would be transported. Though Maradu Municipality stated that major part of the demolition waste (37,441 tonnes) was transported to Kumbalam and Varapuzha Grama Panchayats and KSIDC, Pallippuram, the GPs/ KSIDC replied to Audit that they had not given any sanction to the agency for dumping of demolition waste in their jurisdictional area. No records were furnished to Audit by the ULB/agency in proof of the quantum of waste transported to the*

*locations cited or method of processing and disposal of the massive quantity of the C&D waste resulting from the first major demolition activity undertaken in the State”.*

The above CAG performance report was sent to the Govt. of Kerala on 09-02-2023 and it was tabled on 14-09-2023 with the relevant finding that Kerala is yet to establish facility for processing, recycling and disposing Construction and Demolition waste.

#### **4.0 Findings & Observations**

When the details of disposal were called upon, the Municipality could only provide the weekly vehicle log prepared by the contractor. The log consists of only names of the site and number of loads. After the intervention of the Chairman, SLMC; the joint committee prepared an action plan to address the lacunas in managing C&D waste. Several recommendations were given to the Municipality/ contractor to manage the debris removal, dust emission / noise and water pollution. However, most of the recommendations were not complied by the Municipality/ contractor.

As already observed by the Honourable NGT and SLMC there is a gross violation of the provisions of the Construction and Demolition Waste Management Rules, 2016. The Municipality has not honoured the responsibilities entrusted in them to manage the C&D waste generated from the controlled implosion of four building illegally build with the building permits issued by them in violation of the CRZ regulations. C&D waste generated in this case was literally sold to a private agency and the weekly log of the conveyance prepared by the agency is the only document provided in support of the disposal claims. Municipality ignored their responsibility to transport the waste sites/ facilities for safe disposal/ reprocessing as per the rules. The same has been highlighted in the CAG report of 2022 *“No records were furnished to Audit by the ULB/ agency in proof of the quantum of waste transported to the locations cited or method of processing and disposal of the massive quantity of the C&D waste resulting from the first major demolition activity undertaken in the State”.*

The above reveals that there have been violations of provisions of Rule 6 of the Construction and Demolition Waste Management Rules, 2016. There are no records available with the Municipality on the safe disposal/ proper reprocessing of the C&D waste as per the provisions of the rules. In the above circumstances, the entire quantity of waste (69,606 MT) may be considered as illegally disposed in violations of the provisions stipulated under section (6) *Duties of local authority* as in the Construction and Demolition Waste Management Rules, 2016. The post-demolition debris management was done in violation of the Guidelines on Environmental Management of

Construction & Demolition (C & D) Wastes (Prepared by CPCB in compliance of Rule 10 sub-rule 1(a) of C & D Waste Management Rules, 2016). Thus, environmental compensation (EC) may be imposed in line with the methodology followed in the matter of *Sarang Yadwadkar and others Vs. Pune Municipal Corporation and others* in the O.A. No. 49 of 2019 (WZ).

***Illustration of factors to be considered for Environmental Compensation (EC) calculation***

<b><i>Descriptors</i></b>	<b><i>Factor/ value</i></b>	<b><i>Reference</i></b>
<b><i>1) Capital Cost Factor:</i></b>	<b><i>0.1</i></b>	Referring to CPCB's "Report of the CPCB In-house Committee on Methodology for Assessing Environmental Compensation and Action Plan to Utilize the Fund", Capital cost factor is considered as 0.1.
<b><i>2) Marginal Average Cost for Waste Management:</i></b> Capital cost of C&D waste processing plant to be installed (in Lakh Rupees) /Capacity of the proposed C&D waste processing plant (in Tonnes per day).	<b><i>Rs 49 Lakhs/ 250 TPD = 0.196</i></b>	As there is no C&D waste processing facility in Maradu Municipality and not even in Kochi, City this value is considered from the CPCB Report in the matter of OA No. 49/2019 (WZ).
<b><i>3) O&amp;M Cost Factor</i></b>	<b><i>1.0</i></b>	Referring to CPCB's "Report of the CPCB In-house Committee on Methodology for Assessing Environmental Compensation and Action Plan to Utilize the Fund", Capital cost factor is considered as 1.0.
<b><i>4) Marginal Average O&amp;M Cost:</i></b> O&M cost of the C&D waste processing plant, including labour, transportation, etc. (in Lakh Rupees per day) / C&D waste processed in the plant in Tonnes per day (TPD).	<b><i>Rs.1.675 Lakhs / 250 TPD = 0.0067</i></b>	As there is no C&D waste processing facility in Maradu Municipality and not even in Kochi City, this value is considered from the CPCB Report in the matter of OA No. 49/2019 (WZ).
<b><i>5) Per Day Waste Generation:</i></b> In this matter, the question is the disposal of 69,606 Tonnes of C&D waste subsequent to the controlled implosion of for illegal apartment built in violation of CRZ violation.	<b><i>69,606 Tonnes/1361 Days = 51.14 Tons/Day</i></b>	The C&D waste was generated instantaneously due to controlled implosion of four apartments, which must be managed in accordance with provisions under the C&D Waste Management Rules, 2016. Thus the total quantity reported by the Municipality is treated as per day

		generation considering the fact that the waste was not managed as per the provisions of rules till date. The total violation days as on 27-11-2023 is 1361 days.
<b>6) Per day waste disposed as per the Rules:</b>	<b>0.0 Tonnes</b>	In this matter, it is observed that 69,606 Tonnes of waste disposed is not as per the rules and the Municipality failed to produce any proof/ records in support of its claim.
<b>7) Environmental Externality:</b>	<b>0.01</b>	Referring to CPCB's "Report of the CPCB In-house Committee on Methodology for Assessing Environmental Compensation and Action Plan to Utilize the Fund", the Capital cost factor is considered as 0.01.
<b>8) Number of days of violation (N):</b>	<b>1361 Days</b>	Immediately after the demolition (13-01-2020) to the date of receipt of the completion report (18-06-2020) by Kerala SPCB. That is 158 days and the activities were disrupted for 54 days due to COVID pandemic lockdowns in three phases (25-03-2020 to 17-05-2020). From the CAG report on the improper management of Maradu demolition waste, it is learnt that, KSIDC informed CAG Audit that they had not given any sanction to the agency for dumping of demolition waste in their jurisdictional area. Concerned Gram Panchayath Authorities informed CAG Audit that they had not given any sanction to the agency for dumping of demolition waste in their jurisdictional area. No proofs/ information on the C&D waste processed/ recycled at crushers. Purpose/ disposal route of waste to other sites not provided. Thus, the record reveals that the C&D waste has been mismanaged and not properly disposed as per rules. Hence, the total number of days of violation have been considered to date i.e. 27.11.2023. Therefore, total number of

		violation days is: 1415 days - 54 days (activity disrupted due to COVID) =1361 Days.
<b><i>Environmental Compensation (EC) in Lakhs of Rupees</i></b>	480.94 Lakhs	

### ***5.0 Environmental Compensation (EC)***

$$= \{0.1 \times 0.196 \times (51.14 - 0.0) + 1.0 \times 0.0067 \times (51.14 - 0.0) \times 1361 + 0.01 \times 1361\} \text{ Lakhs}$$

$$= 480.94 \text{ Lakhs}$$

Since, Kerala State Pollution Control Board (KSPCB) submitted that they shall seek CPCB assistance for the re-assessment of Environmental compensation (EC), KSPCB may follow the above calculation and proceed for imposing EC as per the illustration provided above for violation of the C & D Waste Management Rules, 2016.

### **5.4.3 Improper disposal of demolition debris**

Based on the judgement of Hon'ble Supreme Court, four apartments<sup>107</sup> in Maradu Municipality were demolished (January 2020) through controlled explosion method. The processing and disposal of C&D waste generated was entrusted to M/s. Prompt Enterprises, a Land developer, which claimed to have removed 69,606 tonnes of debris from sites, by 18 June 2020. As per Rule 6(5) of Construction and Demolition Waste Management Rules, 2016, the local body was to transport the collected waste to appropriate sites for processing and disposal either through own resources or by appointing private operators. The C&D waste could be utilised in sanitary landfill for municipal solid waste, drainage layer in leachate collection system, daily cover over fresh waste in the landfill, paving blocks in pedestrian areas, etc.

Audit noticed that the agreement executed between the ULB and selected agency did not specify the locations to which the waste was to be transported or the proposed method for reuse/recycle/disposal of waste. Consequent upon receipt of direction from NGT Monitoring committee, the agency submitted a plan of action indicating 11 sites in Ernakulam and Alappuzha districts to which waste would be transported. Though Maradu Municipality stated that major part of the demolition waste (37,441 tonnes) was transported to Kumbalam and Varapuzha Grama Panchayats and KSIDC<sup>108</sup>, Pallippuram, the GPs/KSIDC replied to Audit that they had not given any sanction to the agency for dumping of demolition waste in their jurisdictional area. No records were furnished to Audit by the ULB/agency in proof of the quantum of waste transported to the locations cited or method of processing and disposal of the massive quantity of the C&D waste resulting from the first major demolition activity undertaken in the State.

***Recommendation 10: Government must direct State Pollution Control Board to establish a mechanism by which Producers, Importers and Brand owners of products fulfill their Extended Producer Responsibility (EPR) obligation under Plastic Waste and E-waste Management Rules, 2016.***

***Recommendation 11: With a view to maximise the possibility of reduction, reuse and recycling (3R strategy) of waste generated, Government must ensure that ULBs effectively implement ban on single use plastic, promote substitutes for plastic carry bags, use non-recyclable shredded plastic in roads, operationalise Waste-to-Energy plants, etc.***

***Recommendation 12: Government must ensure that ULBs set up Material Collection Facilities in all wards to facilitate proper segregation of recyclable portion of plastic waste.***

***Recommendation 13: Government must initiate urgent steps for establishing Common Bio-medical Waste Management Facilities at regional level to ensure disposal of bio-medical waste within the time limit and distance specified in the Rules. Government and the State Pollution Control Board must oversee that Health care facilities (HCFs) are functioning with proper***

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<sup>107</sup> H<sub>2</sub>O Holy faith, Alpha Serene Towers, Jain Coral Cove and Golden Kayaloram

<sup>108</sup> Kerala State Industrial Development Corporation

*authorisation and that solid/liquid bio-medical waste generated in these HCFs are treated effectively.*

***Recommendation 14: ULBs must place appropriate containers for collection of Construction and Demolition (C&D) waste and identify land for establishing processing plant for C&D waste generated within their jurisdiction.***



सत्यमेव जयते

# REPORT OF THE COMPTROLLER AND AUDITOR GENERAL OF INDIA ON WASTE MANAGEMENT IN URBAN LOCAL BODIES



SUPREME AUDIT INSTITUTION OF INDIA

लोकहितार्थं सत्यनिष्ठा

Dedicated to Truth in Public Interest



Government of Kerala  
Report No. 9 of the year 2022

**Annexure: R6-5**  
**Revised Illustration of factors to be considered for Environmental Compensation (EC) calculation**

<i>Descriptors</i>	<i>Factors</i>	<i>Reference</i>
1) Capital Cost Factor:	0.1	Referring CPCB's report entitled " <i>Report of the CPCB In-house Committee on Methodology for Assessing Environmental Compensation and Action Plan to Utilize the Fund</i> ", Capital cost factor is considered as 0.1.
2) Marginal Average Cost for Waste Management: Capital cost of C&D waste processing plant to be installed (in Lakh Rupees)	Rs 49 Lakhs/ 250 TPD = 0.196	As there is no C&D waste processing facility in Maradu Municipality and not even in Kochi, this value is considered from the CPCB Report in the matter of OA No. 49/2019 (WZ).
3) O&M Cost Factor:	1.0	Referring to CPCB's report entitled " <i>Report of the CPCB In-house Committee on Methodology for Assessing Environmental Compensation and Action Plan to Utilize the Fund</i> ", Capital cost factor is considered as 1.0.
4) Marginal Average O&M Cost: O&M cost of the C&D waste processing plant, including labour, transportation, etc. (in Lakh Rupees/day) / C&D waste processed in the plant in TPD.	Rs.1.675 Lakhs / 250 TPD = 0.0067	As there is no C&D waste processing facility in Maradu Municipality and not even in Kochi City, this value is considered from the CPCB Report in the matter of OA No. 49/2019 (WZ).
5) Per Day Waste Generation:	59149.5 Tonnes /1453 Days = 40.708 Tonnes/ Day	In this matter, the question is the disposal of 69,606 tonnes of C&D waste subsequent to the controlled implosion of for illegal apartment built in violation of CRZ regulations. However, as per the EC calculation submitted by Kerala SPCB, it is claimed that 10456.5 tonnes of C&D waste was disposed of as per the C & D Rules, 2016 under their supervision. The remaining quantum of C & D waste (i.e., 69606 - 10456.5 = 59149.5 Tonnes) is still not managed properly, therefore violating the provisions of the C & D Rules, 2016. The C & D waste was generated instantaneously due to controlled implosion of four apartments, which must be managed in accordance with provisions under

		the C & D Waste Management Rules, 2016. Thus the quantity. <b>59149.5 tonnes</b> is taken for calculation of per day waste generation considering the fact that the waste was not managed as per the provisions of rules till date. The total violation days as on 27-02-2024 is 1453 days for the quantity of 59149.5 tonnes.
6) Per day waste disposed as per the Rules:	0.0 Tonnes	In this matter it is observed that (69606 - 10456.5) 59149.5 Tonnes of waste is not properly disposed as per the rules. Hence per day waste disposal is taken as '0' tonnes.
7) Environmental Externality:	0.01	Referring CPCB's report entitled " <i>Report of the CPCB In-house Committee on Methodology for Assessing Environmental Compensation and Action Plan to Utilize the Fund</i> ", Environmental Externality is considered as (0.01).
8) Number of days of violation (N):	1453 Days	Immediately after the demolition (13-01-2020) to the date of receipt of the completion report (18-06-2020) by Kerala SPCB, it is 158 days and the activities were disrupted for 54 days due to COVID pandemic lockdowns in three phases (from 25-03-2020 to 17-05-2020). From the CAG report on the improper management of Maradu demolition waste, it is learnt that, KSIDC informed CAG Audit team that they had not given any sanction to the agency for dumping of demolition waste in their jurisdictional area. Concerned Gram Panchayat Authorities informed CAG Audit that they had not given any sanction to the agency for dumping of demolition waste in their Jurisdictional area. No proofs/ information on the C & D waste processed/ recycled at crushers. Purpose/ disposal route of waste to other sites not provided. Thus, the record reveals that the C & D waste has been mismanaged and not properly disposed as per rules. Hence, the total number of days of violation have been considered to date i.e. 27.02.2024. Therefore, total number of violation days is: 1507 days - 54 days (activity disrupted due to COVID) =1453 Days.
Environmental Compensation (EC) in Lakhs of Rupees	<b>411.63 Lakhs</b>	Environmental Compensation (EC) = $\{0.1 \times 0.196 \times (40.70853407 - 0.0) + 1.0 \times 0.0067 \times (40.70853407 - 0.0) \times 1453 + 0.01 \times 1453\}$ Lakhs = 411.63 Lakhs