

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

I. A. NO. 151 OF 2021

ORIGINAL APPLICATION NO. 161 OF 2021 (SUO MOTU)

In the matter of:

Tribunal on its own motion Suo-Motu based On the news item published in Deccan Chronicle newspaper Chennai Edition dated 24.06.2021, under the caption “Penalise Company for dumping toxic waste in Kodaikanal: Activists and the New Indian Express newspaper Chennai Edition dated 25.06.2021 Under the caption “HUL Begins Solid-Remediation works in Kodaikanal”

&

Navroz Mody

... Applicants

Versus

The Chief Secretary to Govt. of
Tamil Nadu and Others

... Respondents

Counter Affidavit Filed on Behalf of Central Pollution Control Board i.e. Respondent No. 2.

I, H. D. Varalaxmi D/o H.S Devaiah aged about 51 years and having office at the Regional Directorate – Chennai, Central Pollution Control Board, 2nd Floor, 77-A, Ambattur Industrial Estate, Chennai – 600058, do hereby solemnly affirm and sincerely state as follows: -

1. That I am presently working as Scientist E and ‘Regional Director’ in Regional Directorate of Central Pollution Control Board (hereinafter referred to as CPCB), Chennai and have been authorized to file the counter affidavit on behalf of 2nd respondent. I am fully conversant with the facts of the case and hence, competent and authorized to depose and swear the present as under;
2. That the averments made in the **Para 1** of I. A. No. 151/2021 is about the matter taken Suo-moto cognizance of news items in Newspaper regarding damaged caused by the Respondent No. 5 i.e. M/s Hindustan Unilever Limited (HUL), and need no comments from this Answering Respondent.



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3. That the averments made in the **Para 2** of the application, it is humbly submitted that, with reference to Hon'ble NGT in the matter of O.A. No. 161/2021 order dated 30.07.2021 constituted a joint committee and directed as follows:

“... In order to ascertain the genuineness of the allegations made in the newspaper report and also the alleged violations of directions issued by the NGT PB, New Delhi in O.A. no. 211/2018, we feel it appropriate to appoint joint committee consisting of 1) A Senior Scientist from CPCB, Regional Office, Chennai and 2) a Senior Scientist from TNPCB as designated by its Chairman to inspect the area in question and submit a report as to whether the directions issued by the Principal Bench in the year 2018 in O.A. no. 211/2018 are being strictly complied with by the 5th respondent/HUL while undertaking the remediation process and if there is any violation, what is the nature of violations committed by them and if any, environmental compensation has to be imposed on account of such violations, then the committee is also directed to assess the environmental compensation and submit the report to this tribunal on or before 31.08.2021 by e-filing.

In mean time committee is directed to inspect the area immediately, file an interim report regarding any prima facie violation before that date...”

In compliance to the aforesaid order, CPCB and TNPCB jointly inspected the contaminated area of M/s Hindustan Unilever Limited (HUL), Kodaikanal on 17.08.2021 and collected the soil samples. The joint committee submitted an interim report on 28.08.2021 and final report with analysis result on 24.09.2021. Conclusions/observations drawn by the said committee are given below:

“Observations /Conclusions of the Committee:

- (i) *The unit has obtained all necessary approvals and started trial commission of Soil Retorting Treatment. The delay in remediation work is due to Covid-19 situation. However, the unit has submitted the pert chart targeting to complete the remediation & post remediation work by October, 2024.*
- (ii) *During the committee visit no illegal or open dumping of excavated untreated soil storage is observed. The unit claims that the washed soil having mercury content less than 20 mg/kg is stored in open yard with tarpaulin closing which is ready for refilling after validation of NEERI. However, the committee has collected the samples to ensure the authenticity and based on the analysis report it shows that mercury concentration is much below 20 mg/kg and ensured washed soil stored in open yard.*



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(iii) *As per the direction of Hon'ble Tribunal in O.A. No. 211/2018 in the matter of Navroz Mody Vs. Union of India & Ors., NEERI has conducted study of Pambar-shola and Pambar River (off site assessment) and it is concluded in the report that mercury contamination in the offsite is within the limit.*

(iv) *The unit has provided silt settling tank & silt traps in order to trap the soil carry over from the contaminated site. The silt trap system is designed based on the consultation/suggestions & recommendation of the Indian Institute of Soil and Water Conservation (ICAR-IISWC). The trapped silt having mercury concentration more than 20 mg/kg will be taken for the remediation.*

In view of the above, it is concluded that the unit started carrying out remediation & trial commissioning as per the Hon'ble Tribunal direction in O.A. No. 211/2018 by following the protocols under supervision/examination of the Scientific Expert Committee (SEC) and Local Area Environment Committee (LAEC)."

4. That the averments made in the **Para 3** are matter of record and hence needs no comments from this Answering Respondent.
5. That the averments made in the **Paras 4 & 5** of the application, it is humbly submitted that the Supreme Court Monitoring Committee (SCMC), appointed by the Hon'ble Supreme Court for monitoring and implementation of the regulation of hazardous wastes, as part of their visit to industries in Tamil Nadu, visited the closed Thermometer factory of Respondent No. 5 at Kodaikanal in September, 2004. In December, 2004, the SCMC had directed Respondent No. 3 i.e. Tamil Nadu Pollution Control Board to involve NEERI, Nagpur to review the studies and associate with the remedial measures. As per the direction of the SCMC, Respondent No. 3 invited a proposal from NEERI for decontamination of machineries and remediation of mercury contaminated area of Respondent No. 5 at Kodaikanal. After reviewing the reports and site visits, NEERI in its report issued in February, 2007 had recommended Site Specific Target Level (SSTL) of 25 mg/kg for remediation soil for mercury.

As per the advice of Scientific Expert Committee (SEC) constituted by SCMC, TNPCB has directed M/s HUL to engage IIT, Delhi to validate Risk Assessment study for human health and ecology. IIT, Delhi in its report issued in October, 2010 has recommended human health and ecological risk assessment based SSTL of 22.42 mg/kg.

Further, it is humbly submitted, Hon'ble NGT (PB), in O.A. No. 211/2018 in its order dated 01.08.2018 directed the CPCB to secure an expert opinion whether the SSTL of 20 mg/kg is the right remediation standard, or the Screening level of 6.6 mg/kg is the right standard. In compliance of said directions, CPCB constituted an expert committee consisting of 8-members comprising from IIT Delhi, IIT Bombay, IIT Madras, IITR Lucknow, NEERI Nagpur, AIIMS Delhi and ICMR Delhi. The expert committee members met on 12th and 24th



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September, 2018 and deliberated on the SSTL (remediation standard). Based on the opinion of the expert committee, CPCB has filed an affidavit before Hon'ble NGT(PB), Delhi recommending 20 mg/kg as the SSTL for remediation of mercury soil contaminated site at M/s HUL Kodaikanal. Accordingly, Hon'ble NGT while disposing the matter in O.A. No. 211 of 2018, vide order dated 01.11.2018, directed Respondent No. 5 (M/s HUL) to carry out remediation work as per recommended SSTL of 20 mg/kg for total Mercury (Hg) with valid authorization from TNPCB following detail site assessment of Pambar Shola River at down gradient of M/s HUL to ascertain the extent of contamination and if required, an ecological risk assessment study may also be carried out.

In view of the above, following actions have been taken:

- TNPCB vide its letter dated 19.06.2020 had informed that Consent to Establish (CTE) regarding remediation work at the said site has been issued to M/s HUL vide dated 17.03.2020. Thereafter, Consent to Operate (CTO) was issued to the unit by TNPCB vide letter dated 05.05.2021.
- Detailed site assessment of Pambar Shola River at down gradient of M/s HUL was awarded to CSIR-NEERI and Forest College Research Center, Tamil Nadu Agricultural University. In this regard, detailed site assessment report from CSIR-NEERI is submitted to TNPCB on 30.08.2021. The conclusions of the aforesaid NEERI report are given below:

“Pambar Shola Forest

- *Samples of soil, bark, lichen, moss, bush, grass and leaves were collected from 44 locations from Pambar Shola forest area and analysed for total mercury.*
- *The mercury concentrations in soil samples collected across the Pambar Shola forest were below the MoEF&CC guideline value of 6.6 mg/kg and the Canadian Council of Ministers of the Environment – Soil Quality Guidelines (CCME- SQG) of 12 mg/kg for the protection of human and environmental health, respectively.*
- *The mercury concentrations in vegetation samples such as bark, lichen, moss, bush, grass and leaves collected across the Pambar Shola forest area are generally less. There is no visible evidence of distress to vegetation, flora and fauna was noticed.*

Pambar River

- *Samples of water, sediment, algae, fish and river bank soil, lichen, and moss, were collected from 23 locations both pre and post monsoon periods from the entire 25 km stretch of Pambar river and analyzed for total mercury.*



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- All water samples collected from Pambar River showed mercury below detectable levels.
- The concentrations of mercury in soil samples were low and less than 1.0 mg/kg during pre and post monsoon periods, with the exception of the location at the Levinge path (which is reported that 4.7 mg/kg and found less than screening level of 6.6. mg/kg). All soil mercury concentrations are below the MoEF&CC guideline value of 6.6 mg/kg.
- All sediment samples from Pambar River showed mercury below the Canadian Guidelines of 0.486 mg/kg.
- Mercury concentrations in lichen, moss, algae and fish samples were less and did not show appreciable enrichment.

Risk Assessment

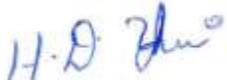
- Screening level based Ecological Risk Assessment (Tier 1) of soil, sediment and water indicated no/negligible risk to flora and fauna, as the observed concentrations are far less than the screening levels.
- Based on the offsite field observations, sampling and analysis, Tier I Screening Level Risk Assessment, and review of the previous Risk Assessment studies, it is observed that HUL site is not likely to pose any off-site ecological risks, particularly to the ecologically sensitive Pambar Shola forest area.
- In conclusion, considering the recommendations of international regulatory agencies, the weight of evidence on the current and past mercury monitoring data, and the screening standards, a further detailed risk assessment of the Pambar Shola is not deemed necessary.”

6. That the averments made in the **Paras 6 & 7** related to the fact that the canopy, leave litter and under growth is lost due to runoff from the site that will necessarily increase with the removal of the tree cover and proper assessment of the same is required. In this regard, it is humbly submitted that the issue involve in Paras may be dealt by Respondent No. 5.
7. That with regard to **Para 8** of the application, it is humbly submitted that matrix-wise clarifications are given below:

a) **Soil:**

- (i) The MoEF&CC guidance document recommends the use of Canadian standards as screening guidelines since Indian guideline value is not available to determine if a




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site is contaminated or not. If the screening guidelines are exceeded, then the next remedial steps are triggered which include a Site Specific Risk Assessment. As per the Canadian Guidelines, the screening guideline for Mercury in agricultural land use is 6.6 mg/kg. Agricultural land use as per the standards "includes agricultural lands that provide habitat for resident and transitory wildlife and native flora.

- (ii) The value of 0.01 mg/kg mentioned in the study report is limit of quantitation (LOQ), which denotes the capability of the analytical method to produce reliable results. It does not represent "background levels". Hence, it is incorrect to say the mercury level is 470 times the background value.
- (iii) Further, soil at the HUL stream discharge point at the factory boundary on Levenge path, having the highest mercury value in soil of 4.7 mg/kg is included in the remediation plan. In this regard, kindly refer Pambar Shola report section 8.3, page 30.

b) Water:

- (i) The MoEF&CC guidance document recommends the use of Canadian standards as screening guidelines wherever Indian standards are not available. In India, available water standards are BIS for drinking water 0.001 mg/L and MoEF&CC standard for industrial effluent discharge into surface water bodies is 0.01 mg/L. Tighter standard of 1.0 µg/L applicable is used as the screening value in the study. ICP-MS is used for measurement with LOQ of 0.003mg/L and LOD of 0.0009 mg/L. Though the observed results are below LOD and LOQ, only results exceeding LOQ was reported, as per the established guidelines.
- (ii) The Canadian value of 0.026 µg/L is being considered as an ultra-trace analytical determination and can be measured only with very sophisticated analytical measuring instruments which are available in abroad Research Labs but not by the analytical instrumentals normally used in India, like ICP-MS etc.

c) Sediment:

- (i) In case of sediment standard, there is no Indian guideline value and Canadian guideline value can be used to for an assessment to decide further risk assessment study is required or not.
- (ii) Canadian sediment quality guidelines were used for ecological risk assessment which has two sets of values, interim sediment quality guidelines (ISQG), probable effect levels (PEL) whose values are 0.17 and 0.486 mg/kg, respectively. ISQGs are derived when available data is limited and knowledge gap exist, whereas PELs are based on potential for developing adverse biological effects in aquatic



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organisms. In addition, the adverse biological effect in sediment dwelling organisms depends on bioavailability, nature of aquatic species.

- (iii) It is the PEL that is realistic and concentrations above this level would indicate based on scientific data, adverse effects. The ISQGs are conservative, and exceedance of these concentrations does not immediately warrant a remediation. In practice, it is general the scientific community of the regulatory body that based on the science determines the next step. As per the Canadian Guidelines, "*studies provide additional evidence that toxic levels of Hg in sediments are similar to, or greater than, the PELs, confirming that adverse effects are more likely to be observed when concentrations of Hg exceed the PELs.*"
- (iv) The results of the study were compared with ISQG, and found 41 samples i.e. 93% of the samples collected were below the ISQG, with only 3 samples representing 7% of the total number of samples exceeding the ISQG standard. When comparing the data to the PEL i.e. probable effects level (i.e. the level above which adverse effects are more likely to be observed), none of the samples reported concentrations exceeding this value. Additionally, none of the 90 soil samples collected exceeded the screening value. Hence, the conclusion of the study is in order using the PEL (Probable Effects Level) of 0.486 for sediments.

d) **Moss:**

- (i) There is no screening value for vegetation in India or abroad to compare. Lichens and moss are widely used as biomarkers because of their ability to absorb and accumulate heavy metals, including mercury, from atmosphere. There is limited possibility to uptake of mercury from lichen/moss by animals, birds or insects. Hence, it is considered to be low risk.
- (ii) Reporting concentrations over the limit of detection has no significance and therefore cannot be used as a scientific basis for suggesting that the stream bed is an active source of mercury.
- (iii) The petitioner wrongly assumed, 0.008 mg/kg as the background value and stated that the observed concentration is 795 times higher than the background value. This is not correct. The 0.008 mg/kg mentioned in the report is the LOQ of the instrument used for measurement and not the background value as considered by the petitioner.
- (iv) The highest concentration 6.36 mg/kg (w.r.t. dry weight) was obtained in moss sample collected at the factory boundary at the stream discharge point in Levenge path. Review of literature indicates that mercury absorption and accumulation in lichen and moss may be enhanced, due to fog or mist conditions prevalent, which is same case at this

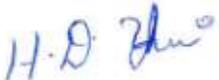


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location. This area is already included in the remediation plan. It is pertinent to mention that the remediation standard for soil, as per the order of the Hon'ble NGT (PB) in O.A. No. 211/2018, for the factory premises and surrounding areas is 20 mg/kg.

8. That the averments made in the **Para 9** related to, weekly samples water, soil, and sediment from Pambar Shola. In this regard, it is humbly submitted that Respondents No. 4 & 5 may be directed to carry out sampling of contaminated surface water, sediment and soil sampling and submit monthly report on status of remediation work to answering respondent.
9. That the averments made in the **Paras 10 & 11**, related to felling of trees and wildlife and hence need no comments from this Answering Respondent.
10. That the averments made in the **Paras 12 & 13** of I. A. No. 151/2021 is about submission of Applicant, and hence need no comments from this Answering Respondent.
11. This Answering Respondent humbly prays the Hon'ble Tribunal that,

- i. CPCB reviewed the Site Specific (remediation) Target Level of 20 mg/kg for mercury contaminated site by constituting expert committee consisting of 8 members in compliance of Hon'ble NGT (PB) order dated 01.08.2018. Hon'ble Tribunal (PB) in its order dated 01.11.2018 has accepted the opinion of CPCB and directed to carry out the remediation work as per the recommendations. However, the remediation activity of contaminated site in and around the closed thermometer factory has been delayed inordinately. Hence, Hon'ble Tribunal may direct Respondent No. 5 to expedite the remediation activity as per the committed schedule under supervision of Respondent No. 4 and Committees constituted i.e. Local Area Environment Committee & Scientific Experts Committee.
- ii. By considering the above facts/clarifications, the Hon'ble Tribunal may be pleased to pass appropriate order(s) as deemed fit and proper in these circumstances of the case.


Deponent

VERIFICATION

Verified that the contents of the above counter affidavit are true & correct to best of my knowledge and belief. Nothing has been concealed therein

Signed and verified on this 27th day of November, 2021 at Chennai




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