

**BEFORE THE NATIONAL GREEN TRIBUNAL
SOUTHERN ZONE**

ORIGINAL APPLICATION NO. 107 OF 2023

In the matter of:

Suo Motu based on the news item published
in The New Indian Express, dt. 09.08.2023,
under the caption “Huge pollution risk in 8Km
around NLC” and in The Times of India,
Chennai Edition dt. 09.08.2023 under the
caption “Water near NLC full of Mercury”

Versus

The Managing Director, NLC India Limited,
Chennai and Ors.

.....Respondent(S)

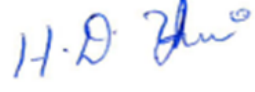
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Place: Chennai

Date: 09.10.2023




H.D. VARALAXMI, M.Tech
Regional Director
CENTRAL POLLUTION CONTROL BOARD
(MoEF & CC. Govt. of India)
Regional Directorate (Chennai)
2nd Floor, 77-A, South Avenue Road,
Ambattur Industrial Estate, Chennai - 600 054

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**AFFIDAVIT FILED ON BEHALF OF RESPONDENT NO. 4, CENTRAL
POLLUTION CONTROL BOARD**

I, H. D. Varalaxmi, D/o Late Shri H.S. Devaiah, Hindu, aged about 54 years and
having office at the Regional Directorate – Chennai, Central Pollution Control
Board, 2nd Floor, 77-A, Ambattur Industrial Estate, Chennai – 600 058, do
hereby solemnly affirm and sincerely state as follows: -

1. That I am presently working as Scientist ‘E’ & holding Charge of
Regional Director, Regional Directorate, Chennai, Central Pollution




H.D. VARALAXMI, M.Tech
Regional Director
CENTRAL POLLUTION CONTROL BOARD
(MoEF & CC, Govt. of India)
Regional Directorate (Chennai)
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Control Board (hereinafter called as CPCB) and have been authorized to file the affidavit on behalf of Respondent No. 4. I am fully conversant with the facts of the case and hence, competent and authorized to depose and swear the present as under:

2. It is submitted that CPCB based on the direction of NGT in its order dated 28.08.2023 visited M/s NLC India Limited during September 28-29, 2023. CPCB Regional Directorate Chennai collected the samples in the same locations as mentioned in the the report of Poovulagin Nanbargal and Manthan Adhyayan Kendra published in August 2023 titled '*POWERing Pollution: The Environmental and Pollution Impacts of Thermal Power Stations and mining Operation in Neyveli & Parangipettai*'.
3. A total of 11 water samples from lake, Mines seepage & treated effluent from Thermal Power Stations samples were collected and 05 bore well water samples from nearby villages were collected and analyzed.
4. The analysis results of the treated effluent discharged from TPS-II is not meeting the standard prescribed by TNPCB w.r.t TSS, BOD & COD parameter. The lakes samples results show that the Lakes falls under Class A, B & E of Designated Best Use (pH & BOD parameter). However, at these three locations, the concentration of Nickel (0.031mg/L, 0.086mg/L & 0.040mg/L) is exceeding the drinking water standard of 0.02mg/L. The analysis results of samples taken from drain carrying mines seepage & rain water which is used for irrigation purposes is meeting the standard prescribed by TNPCB. The result of bore well samples collected from nearby villages is meeting drinking water standard, but slight increase in TDS concentration (598mg/L) in bore well located at Vanadhirayapuram Village.



H.D. Varalaxmi

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5. None of the samples collected showed the concentration of heavy metals such as Mercury, Cadmium & Selenium as mentioned in the newspaper.

The copy of the CPCB report is annexed as **Annexure 1**.

Hence in view of above, it is respectfully prayed that this Answering Respondent No. 4 will abide by the order(s)/direction(s) passed by this Hon'ble Tribunal.

H.D. Varalaxmi

Deponent

H.D. VARALAXMI, M.Tech
Regional Director
CENTRAL POLLUTION CONTROL BOARD
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2nd Floor, 77-A, South Avenue Road,
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VERIFICATION

It is verified that the content of this Affidavit is based on official record and information available in the office are true and correct. Nothing has been concealed therein.

Signed and verified on this 9th day of October, 2023 at Chennai

[Signature]

Counsel for CPCB



H.D. Varalaxmi

Deponent

H.D. VARALAXMI, M.Tech
Regional Director
CENTRAL POLLUTION CONTROL BOARD
(MoEF & CC. Govt. of India)
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Annexure -1

REPORT OF CENTRAL POLLUTION CONTROL BOARD AS PER THE DIRECTION OF HON'BLE NGT ORDER DATED 28.08.2023 IN THE MATTER OF SUO MOTU CASE OA NO. 107 OF 2023

1.0 Background

The Hon'ble NGT (SZ) Chennai Suo Motu based on news item published in The New Indian Express, dt 09.08.2023, under the caption "Huge pollution risk in 8Km around NLC" and in The Times of India, Chennai Edition dt. 09.08.2023 under the caption "Water near NLC full of Mercury". The NGT in its order dated 28.08.2023 stated that "*5. The MoEF&CC and the CPCB are directed to file their respective reports in this regard before the next date of hearing.*" The copy of the NGT order dated 28.08.2023 is annexed as **Annexure 1**.

In compliance to NGT direction, CPCB RD Chennai visited M/s NLC India Limited, Neyveli during September 28-29, 2023 and collected surface & groundwater samples in and around NLC, samples from Mine I & II seepages and treated effluent samples from Thermal Power Stations. The location of the sampling was selected as per the report of **Poovulagin Nanbargal and Manthan Adhyayan Kendra published in August 2023 titled 'POWERing Pollution: The Environmental and Pollution Impacts of Thermal Power Stations and mining Operation in Neyveli & Parangipettai'**. CPCB RD Chennai is in the process of establishing its own laboratory. Hence, to accomplish day to day work, CPCB RD Chennai empanelled EPA recognized laboratory M/s Mats India Pvt. Ltd., Nerkundram, Chenna. The preserved samples collected were handover to M/s Mats India Pvt. Ltd. for analysis.

2.0 About M/s NLC India Limited, Neyveli

NLC started its mining operation of Mine I in the year 1956, at present NLC has three open cast lignite mining i.e. Mine I, Mine IA & Mine II. The total capacity of mining is 32.5 Million Tonnes per Annum (MTPA) and has four thermal power stations with a total installed capacity of 3390 MW. NLC has a total area of 200sqkm.

NLC has obtained Environment Clearance (EC) from MoEF&CC and Consent to Establish (CTE) and Consent to Operate (CTO) from Tamil Nadu Pollution Control Board for operation of mining's and TPS.

2.1 Mine - I of NLC

The Mine I was started in the year 1957, at present the total lease area of Mine - I is 3635.4Ha for mining of lignite of 10.5MTPA capacity. The CTO of Mine - I issued by TNPCB is valid up to 31.03.2027, as per the CTO, 65480 KLD of mine seepage water from Mine I is permitted to discharge for irrigation. It was informed that, the mine seepage water along with rain water is partially discharged to canal and partially to artificially created pond for utilizing in M/s TPS-I Expansion and M/s New Neyveli Thermal Power Plant. During inspection, Mine I was in operation and samples from seepage water of Mine I and artificial lake was collected.

2.2 Mine - IA of M/s NLC

The total project area of Mine - IA is 2005.8Ha and EC from MoEF&CC has been obtained in 2015. The Mine - IA has a valid CTO from TNPCB up to 31.03.2026 for mining lignite of capacity 7MTPA. As per CTO, Mine seepage & rain water of 1,05,777.3 KLD is permitted to discharge. It was informed that, 59975.0 KLD is utilized in M/s TPS-I Expansion and M/s New Neyveli Thermal Power Plant. Further, 13090.0 KLD is planned to supply to Chennai Metro Water for water supply to public during summer season. The remaining 32551.6 KLD of water from mine seepage & rain water is discharged to canal for irrigation. During inspection, the water sample was collected from Mine - IA.

2.3 Mine - II

The Mine - II has EC from MoEF&CC for 15MTPA of open cast lignite mining in the year 2002 and CTO from TNPCB valid up to 31.03.2027. As per the CTO, Mine - II seepage & rain water of 78475 KLD is permitted to discharge for irrigation. During inspection, it was observed that, water treatment plant was under construction, the pipeline for tapping water from Mine - II was completed. This water is used by M/s TPS-II & M/s TPS-II expansion and for irrigation. During inspection, sample from Mine - II seepage water was collected.

2.4 M/s Neyveli Thermal Power Station I

M/s. Neyveli Thermal Power Station I was started its operation in the year 1960. The unit has obtained CTO in year 1984 and subsequently renewed up to 31.3.2020. The unit had 6 x 50MW and 3 x 100MW capacity. The unit was decommissioned in the year 2020, after considering the conditions of machineries. During inspection, TPS-I was not in operation and

the water sample from drain (Storm Water) where treated effluent was discharged from TPS-I in past was collected.

2.5 M/s Neyveli Thermal Power Station - I Expansion

The unit has obtained EC from the MoEF&CC for Expansion of Unit-I in the year 1990 for production of electricity of capacity 2 x 210MW. The CTO issued from TNPCB in 2001 and subsequently renewed, now valid up to 31.03.2023. As per CTO, the treated effluent of 9000KLD is allowed to discharge for irrigation. During inspection the TPS I Expansion was operational, and treated effluent sample was collected.

2.6 M/s Neyveli Thermal Power Station - II

TPS - II has taken EC from MoEF&CC in the year 1983 for 7x210MW and CTO from TNPCB in 1991. The CTO was subsequently renewed and is valid up to 31.03.2027, as per CTO 89040 KLD of treated effluent is permitted to discharge for irrigation. During inspection, the TPS - II was in operation and treated water sample was collected.

2.7 M/s. Neyveli Thermal Power Station - II Expansion

The unit has obtained EC from the MoEF&CC in the year 2003 for operating 2x250MW and CTO from TNPCB in 2005. Subsequently, it is renewed up to 31.03.2027 and as per CTO, the unit is consented to discharge 21440 KLD of treated effluent for irrigation. During inspection, the unit was operational and treated effluent sample was collected for analysis.

2.8 M/s Neyveli New Thermal Power Station (NNTPS)

The unit has obtained EC from MoEF&CC for production of power of capacity 2x500MW in the year 2010. The unit then applied for CTO from TNPCB and obtained in year 2019 with validity up to 31.03.2023. The unit has applied for renewal and yet to receive from TNPCB. As per CTO, 15600KLD of treated effluent is permitted to discharge for irrigation. During inspection, the NNTPS was operational at full capacity and treated effluent sample was collected.

The mine seepage & rain water from Mine I, Mine IA, TPS I expansion, and NNTPS treated effluent is discharged into storm water drains where it joins Paravanar canal. whereas treated effluent from Mine II, TPS II, & TPS II expansion is discharged into Paravanar canal, and ultimately joins Walaja Lake.

3.0 Analysis results of the samples collected from M/s NLC India Limited, Neyveli

During September 28-29, 2023, a total of 16 samples were collected from surface & ground water in & around NLC, treated effluent from Mines I, IA & II and TPS I expansion, TPS II, TPS II expansion and NNTPS. The samples collected were preserved and hand over to M/s Mats India Pvt. Ltd., Chennai for analysis. The analysis results are depicted in the tables 1 to 4.

Table 1: Analysis results of TPS

Parameters	Direct Discharge from TPS-I	Discharge from NNTPS	Discharge from Neyveli TPS II	TPS I expansion	Standard Prescribed by TNPCB
pH	7.5	8.9	7.3	7.7	5.5-9.0
TDS, mg/L	246	1210	860	1158	2100
TSS, mg/L	9	73	290	29	100
Chloride, mg/L	30	318	159	342	1000
Sulphate, mg/L	66	347	370	354	1000
COD, mg/L	8	32	288	28	250
BOD, mg/L	BLQ (LOQ:2.0)	6	82	4	30
%Sodium	32	55	35	52	-
Mercury, mg/L	BLQ	BLQ	BLQ	BLQ	-
Nickel, mg/L	0.009	0.029	0.012	0.021	-
Cadmium, mg/L	BLQ	BLQ	BLQ	BLQ	-
Selenium, mg/L	BLQ	0.005	0.003	0.004	-

BLQ-Below Limit of Quantification (Limit of Quantification is 0.001)

Table 2: Analysis results of Mines seepages

Parameters	Mine –I Outlet at Veenangeni	Mine I Seepage	Opposite to Main Gate of Mine II – Kootu Kudineer Thittam near Valayamadevi	Standard Prescribed by TNPCB
pH	7.62	6.33	7.7	5.5-9.0
TDS, mg/L	312	440	860	-

TSS, mg/L	9	5	70	200
Chloride, mg/L	50	48	122	-
Sulphate, mg/L	98	232	284	-
COD, mg/L	BLQ (LOQ:4.0)	8	57	-
BOD, mg/L	BLQ	BLQ	14	100
% Sodium	34	18	37	-
Mercury, mg/L	BLQ	BLQ	BLQ	-
Nickel, mg/L	0.028	0.027	0.009	-
Cadmium, mg/L	BLQ	BLQ	BLQ	-
Selenium, mg/L	BLQ	0.002	BLQ	-

Table 3: Analysis results of Lakes at NLC

Parameters	Artificial Lake located at North side of TS-II, South side of NNTPS, west side of abandoned ash pond	Mine I A Seepage Discharge point into Ayan lake	Paravanar canal carrying Mine-II seepage	Walaja Lake (All the discharges from mines and TPS is collected)
pH	7.0	5.5	8.2	8.2
TDS, mg/L	620	434	994	782
TSS, mg/L	BLQ	69	34	252
Chloride, mg/L	104	75	223	124
Sulphate, mg/L	470	204	325	207
COD, mg/L	12	32	20	12
BOD, mg/L	BLQ	5	3	BLQ
%Sodium	31	24	42	47
Mercury, mg/L	BLQ	BLQ	BLQ	BLQ
Nickel, mg/L	0.031	0.086	0.004	0.040

Cadmium, mg/L	BLQ	BLQ	BLQ	BLQ
Selenium, mg/L	0.002	BLQ	0.002	BLQ
Class of Lake as per CPCB guidelines	A	E	B	A

Table 4: Analysis results of Bore well samples collected by nearby Villages

Parameters	Bore well located near OHT, Thandapani Koil Street, Kaikalarkuppam	Bore Well water at Block-22 Pump House(Jawahar College)	Tholkappier Nagar	Bore well water at Mariyamm an Temple, Ayikuppam Village	Bore well Located at Vanadhiraya puram Village	Drinking water standard as per BIS spec. (IS10500-2012)
pH	7.1	6.9	7.2	7.3	6.7	5.5-9.0
TDS, mg/L	182	106	470	382	594	500
Chloride, mg/L	17	12	65	59	127	250
Sulphate, mg/L	4	3	148	168	68	200
% Sodium, mg/L	31	34	32	33	37	-
Mercury, mg/L	BLQ	BLQ	BLQ	BLQ	BLQ	0.001
Nickel, mg/L	0.002	0.003	0.009	0.011	0.003	0.02
Cadmium, mg/L	BLQ	BLQ	BLQ	BLQ	BLQ	0.003
Selenium, mg/L	BLQ	BLQ	BLQ	BLQ	BLQ	0.01

From the **table 1**, the treated effluent discharged from TPS-II **is not meeting the standard prescribed by TNPCB w.r.t** TSS, BOD & COD parameter, the analysis results indicates that poor efficiency/performance of Effluent Treatment Plant. The lakes samples results in **table 3** show that the Lakes falls under **Class A, B & E of Designated Best Use** (pH & BOD parameter). However at these three locations, the concentration of Nickel (0.031mg/L, 0.086mg/L & 0.040mg/L) is exceeding the drinking water standard of 0.02 mg/L. The table 2

shows results of mines seepage & rain water discharged for irrigation purposes, and it is meeting the standard prescribed by TNPCB. The bore well samples collected from nearby villages results (table 4) which is used for drinking as well as for cooking purposes is meeting drinking water standard, but bore well located at Vanadhirayapuram Village, there is slight increase in TDS concentration (598mg/L).

Conclusion:

None of the samples collected showed the concentration of heavy metals such as Mercury, Cadmium & Selenium as mentioned in the newspaper.



Poornima B.M
Scientist D



H.D Varalaxmi
Regional Director