

BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL  
SOUTHERN ZONE, CHENNAI.

**Original Application No. 107 of 2023**

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

And

The Managing Director  
NLC India Limited,  
Chennai and Ors.

.....Respondents

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**Advocate for Respondent: TNPCB**  
**Thiru.S. Sai Sathya Jith,**  
**Advocate, Chennai.**

**BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL  
SOUTHERN ZONE, CHENNAI  
Original Application No. 107 of 2023**

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And


The Managing Director  
NLC India Limited,  
Chennai and Ors.

.....Respondents

**REPORT FILED ON BEHALF OF THE FIFTH RESPONDENT  
- TAMIL NADU POLLUTION CONTROL BOARD**

I, R. Rajamanickam, Son of P.M. Ramasamy, aged about 59 years, having office at No.76, Mount Salai, Guindy, Chennai 600 032, do hereby solemnly affirm and sincerely state as follows:-

1. I submit that I am working as the Additional Chief Environmental Engineer, Tamil Nadu Pollution Control Board and I am authorized to file this report on behalf of the fifth respondent and as such I am well acquainted with the facts of the case from the office records.
2. It is respectfully submitted that Poovulagin Nanbargal and Manthan Adhyayan Kendra have published a report in August 2023, titled 'POWERing Pollution: The Environmental and Pollution Impacts of Thermal Power Stations and mining Operation in Neyveli & Parangipettai'.
3. It is submitted that the report which is published by Poovulagin Nanbargal and Manthan Adhyayan Kendra in August 2023, it is mentioned that a comprehensive assessment on both Neyveli and Parangipettai regions have been carried out with the involvement of local communities and bring out new issues that may have not been previously highlighted,

  
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identify source of pollution and suggest ways in which the issues could be addressed. It is also mentioned that they carried out water and soil sampling, also questionnaire-based surveys of the local communities in the surrounding of NLC in Neyveli and ITPCL in Parangipettai. It is also mentioned that several surface as well as ground water sources were found to have high levels of turbidity, hardness, Total Dissolved Solids (TDS), Total Suspended Solids (TSS), Oil & Grease and, high Chemical Oxygen Demand (COD) and presence of elements like Aluminum, Boron, Fluoride, Iron, Manganese, Magnesium, Mercury and Selenium in high concentration.

4. It is submitted that the Hon'ble National Green Tribunal (SZ), Chennai in its order dated 18.1.2024, it is stated that Poovulagin Nanbargal has furnished a report along with the reports of the testing centers and directed the Tamil Nadu Pollution Control Board to file their comparative test report for further action. As per the Order by the Hon'ble Tribunal, the comparative test report is as follows:

**Comparative Study on "Report of Analysis of the samples collected by the committee along with NGO Report."**

As per on the powering Pollution, type of samples and number of samples taken by the NGO are as follows:

**Samples Collected by NGO**

	Surface Water	Ground Water	Soil samples	Fly ash	Total
Total samples	22	9	5	1	37

**Samples Collected by TNPCB Committee**

	Surface Water samples	Ground Water samples	Effluent samples discharged outside the unit's campus	Soil Samples	Fly ash /bottom ash	Total
As per powering Pollution locations	22	9	--	5	1	37
Additional samples collected	0	5	7	0	2	14
Total	22	14	7	5	3	51

  
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As per Hon'ble NGT(SZ) order dated 18.01.2021 the comparison between the reports of analysis of samples collected by TNPCB Committee and NGO are enclosed vide Annexures.

## INFERENCE REPORT

### I. Surface Water:

- a. The powering report in page No. 36 and 48 claims that presence of high level of TSS, Mercury, Selenium, Fluoride, Iron, Aluminium Magnesium and Calcium at **discharge from Neyveli TPS II and Ramapuri, Mantharakuppam Vadakkuvellur** locations. whereas the committee's test report shows that above parameters are within the limit as per standards IS: 2296:1982 standard and also TNPCB standards (Class E – Water for irrigation, industrial cooling and controlled waste disposal).
- b. The powering report in page No. 48 claims that presence of Iron, Aluminium Nickel, Manganese Calcium Mercury Aluminium and Magnesium at **Opposite to Main Gate of NLC Mine 2 Kootu Kudineer Thitam near Valiyamadevi** location. *whereas the committee's test report shows that above parameters are within the limit as per standards IS: 2296:1982 standard and also TNPCB standards (Class E – Water for irrigation, industrial cooling and controlled waste disposal)*
- c. The powering report in page No. 48 claims that presence of Iron, Aluminium Nickel, Manganese TSS, Oil and Grease COD at **Neyveli PCS store, Discharge from NNTPS(polluted stream) and Discharge from NNTPS(unpolluted stream)** locations. *whereas the committee's test report shows that above parameters are within the limit as per standards IS: 2296:1982 standard and also TNPCB standards (Class E – Water for irrigation, industrial cooling and controlled waste disposal)*
- d. The powering report in page No. 48 claims that presence of TSS, Mercury and Selenium at **TPS 2 outlet and discharge from NNTPS** locations. *whereas the committee's test report shows that*

  
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*above parameters are within the limit as per standards IS: 2296:1982 standard and also TNPCB standards (Class E – Water for irrigation, industrial cooling and controlled waste disposal)*

- e. The powering report in page No. 49 claims that presence of Iron and Aluminium at **Kanjamandanpettai Pond ( Control Point)** location. *whereas the committee's test report shows that above parameters are within the limit as per standards IS: 2296:1982 standard and also TNPCB standards (Class E – Water for irrigation, industrial cooling and controlled waste disposal)*
- f. The powering report in page No. 49 claims that presence of selenium at **Vadaku vellur Ammeri** location. *whereas the committee's test report shows that above parameters are within the limit as per standards IS: 2296:1982 standard and also TNPCB standards (Class E – Water for irrigation, industrial cooling and controlled waste disposal).*
- g. The powering report in page No. 49 claims that presence of, Low pH, high turbidity, Mercury, Selenium, Magnesium and Calcium at **NNTPS outlet near Throupathi Ammeri** location. *whereas the committee's test report shows that above parameters are within the limit as per standards IS: 2296:1982 standard and also TNPCB standards (Class E – Water for irrigation, industrial cooling and controlled waste disposal).*
- h. The powering report in page No. 49 claims that presence of high level of TSS, Mercury, Selenium, Magnesium and Calcium at **central store** location. *whereas the committee's test report shows that above parameters are within the limit as per standards IS: 2296:1982 standard and also TNPCB standards (Class E – Water for irrigation, industrial cooling and controlled waste disposal).*

Note: NGO has compared the surface water report with the drinking water standards. Surface water quality shall be compared with surface water quality standards prescribed for Class E: in IS: 2296:1982.

  
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## II. Ground Water:

- a. The POWERing Report in page 47 claims that presence of mercury at **Tholkappiar Nagar and Vadakuvellur** locations as 250 times the norm whereas the committee's test report done twice indicate only below 0.001 mg/l which is the Limit of quantification. The standard for mercury in drinking water as per IS:10500:2012 is 0.001mg/L.
- b. The POWERing Report in page 48 claims that presence of high turbidity , hardness, TDS, Fluoride, Iron, Calcium and Manganese at **Aadhandarkollai Borewell near Thiravupathi Amman Temple 300m away from ash pond** location as seriously contaminated whereas the committee's test report shows that above parameters are within the limit as per standards.
- c. The POWERing report in page 48 claims that presence of silicon and Boron at **Vanadhirayapuram Village 100 meters from the Mine** location. whereas the committee's test report shows that Boron is within the limit as per standards.
- d. The POWERing report in page 48 claims that presence of Aluminum at **NLC Pipe Water (Drinking Water Supplied by NLC Management)** location as seriously contaminated whereas the committee's test report shows that aluminum is within the limit as per standards. The Committee's report shows that TDS (678/500) , Sulphate (209/200) Hardness (298/200) and Calcium (79/75) are marginally higher than the Drinking water Standards.
- e. The POWERing report in page 48 claims that presence of Zinc at **Vellankulam** location as contaminated whereas the committee's test report shows that Zinc is within the limit as per standards. The Committee's report shows also that aluminum (0.130/0.03) is marginally higher than the Drinking water Standards.

## III. Soil samples:

- a. The POWERing report in page 49 claims that presence of Nickel, Zinc and copper at **paddy field within in one kilometer from the stack of NNTPS location.** But in NGO ROA Nickel (87.4/45) only exceed the

  
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limit and zinc within the limit. *whereas the committee's test report shows that zinc and Nickel are within the limit as per standards.*

- b. The POWERing report in page 49 claims that presence of low pH and high levels of chromium at **agricultural land near Iyyan land** location. *whereas the committee's test report shows that chromium is within the limit as per standards.*
- c. The POWERing report in page 49 claims that presence of Selenium at **Vadakuvellur Karumbu thottam** location. *whereas the committee's test report shows that Zinc and Nickel are marginally exceed the limit (Zinc 492.7 mg/kg as against Canadian standard 250 mg/kg, Nickel 99.62mg/kg as against Canadian standard 45 mg/kg) and selenium is below the limit of Quantification.*
- d. The POWERing report in page 49 claims that presence of Selenium at **Vadakuvellur Bypass** location. NGO not furnished the ROA of soil sample. *whereas the committee's test report shows that all the parameters are within the limit as per standards.*

#### Conclusion:

- i. Ground water samples collected by TNPCB Committee for analysis reveals that heavy metals are within the limit the permissible limit except the location of Vellankulam where in exceedance of aluminium (0.130mg/L as against 0.03mg/l) is observed as prescribed by the Bureau of Indian Standards for drinking water as per BIS 10500/2012
- ii. Surface water samples collected by TNPCB Committee for analysis reveals that heavy metals are within the limit as per standards IS 2296:1982 standard.
- iii. Soil Samples collected by TNPCB Committee for analysis reveals that, there is no heavy metal contamination observed and the elements of Zinc, Cadmium, Nickel, Lead, Arsenic, Chromium, Mercury and selenium are within the prescribed standard limit except the place of Vadakkuvellur, where in some exceeded level were observed with respect to the Zinc and Nickel concentration. (Zinc 492.7 mg/kg as against Canadian standard 250 mg/kg, Nickel 99.62mg/kg as against Canadian standard 45 mg/kg)

  
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Therefore, it is humbly prayed that this Hon'ble National Green Tribunal (Southern Zone) may be pleased to pass such order or further other orders as this Hon'ble Tribunal may deem fit and proper in the facts and circumstances of this case and thus render justice.

  
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### VERIFICATION

I, R. Rajamanickam, Son of P.M. Ramasamy, aged about 59 years, having office at No.76, Mount Salai, Guindy, Chennai 600 032, do hereby verify that the contents of above report are true to the best of my knowledge through records.

  
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**ANNEXURE****COMPARISON OF HEAVY METALS IN SURFACE WATER SAMPLES  
COLLECTED BY TNPCB WITH NGO REPORT****All Parameters are in Mg/L**

<b>Name of the location : Neyveli PCS store Discharge</b>				
<b>S. NO</b>	<b>Parameters</b>	<b>Surface water Standard (IS 2296 Class E)</b>	<b>TNPCB Report</b>	<b>NGO report (M/s. Chennai Mettex Lab Private Limited)</b>
1.	Zinc as Zn	-	0.014	BDL
2.	Cadmium as Cd	-	BLQ	BDL
3.	Nickel as Ni	-	0.005	0.035
4.	Lead as Pb	-	0.006	BDL
5.	Arsenic as As	-	BLQ	BDL
6.	Total Chromium as Cr	-	BLQ	BDL
7.	Mercury as Hg	-	BLQ	BDL
8.	Selenium as Se	-	BLQ	BDL
9.	Calcium as Ca	-	8	112.2
10.	Magnesium as Mg	-	2.67	34
11.	Manganese as Mn	--	0.012	0.399
12.	Iron as Fe	-	3.27	1.45
<b>Name of the location : Discharge from NNTPS (polluted Surface water)</b>				
<b>S.NO</b>	<b>Parameters</b>	<b>Surface water Standard (IS 2296 Class E)</b>	<b>TNPCB Report</b>	<b>NGO report (M/s. Chennai Mettex Lab Private Limited)</b>
1.	Zinc as Zn	-	0.0124	0.05
2.	Cadmium as Cd	-	BLQ	BDL
3.	Nickel as Ni	-	0.117	0.011
4.	Lead as Pb	-	0.006	BDL
5.	Arsenic as As	-	BLQ	BDL
6.	Total Chromium as Cr	-	BLQ	BDL
7.	Mercury as Hg	-	BLQ	BDL
8.	Selenium as Se	-	BLQ	BDL
9.	Calcium as Ca	-	169	102.2
10.	Magnesium as Mg	-	63	36.4
11.	Manganese as Mn	--	6.68	0.064
12.	Iron as Fe	-	5.3	1.91
<b>Name of the location : Discharge from NNTPS (unpolluted stream surface water)</b>				
<b>S.NO</b>	<b>Parameters</b>	<b>Surface water Standard (IS 2296 Class E)</b>	<b>TNPCB Report</b>	<b>NGO report (M/s. Chennai Mettex Lab Private Limited)</b>

<b>Name of the location : Neyveli PCS store Discharge</b>				
<b>S. NO</b>	<b>Parameters</b>	<b>Surface water Standard (IS 2296 Class E)</b>	<b>TNPCB Report</b>	<b>NGO report (M/s. Chennai Mettex Lab Private Limited)</b>
1.	Zinc as Zn	-	0.0124	BDL
2.	Cadmium as Cd	-	BLQ	BDL
3.	Nickel as Ni	-	0.117	0.029
4.	Lead as Pb	-	0.006	BDL
5.	Arsenic as As	-	BLQ	BDL
6.	Total Chromium as Cr	-	BLQ	BDL
7.	Mercury as Hg	-	BLQ	0.004
8.	Selenium as Se	-	BLQ	BDL
9.	Calcium as Ca	-	169	200
10.	Magnesium as Mg	-	63	38.8
11.	Manganese as Mn	--	6.68	0.165
12.	Iron as Fe	-	5.3	2.59
<b>Name of the location : Direct Discharge from Neyveli TPS I</b>				
<b>S.NO</b>	<b>Parameters</b>	<b>Surface water Standard (IS 2296 Class E)</b>	<b>TNPCB Report</b>	<b>NGO report (M/s. Chennai Mettex Lab Private Limited)</b>
1.	Zinc as Zn	-	0.065	BDL
2.	Cadmium as Cd	-	BLQ	BDL
3.	Nickel as Ni	-	0.075	0.10
4.	Lead as Pb	-	BLQ	BDL
5.	Arsenic as As	-	BLQ	BDL
6.	Total Chromium as Cr	-	BLQ	BDL
7.	Mercury as Hg	-	BLQ	BDL
8.	Selenium as Se	-	BLQ	BDL
9.	Calcium as Ca	-	52	36.8
10.	Magnesium as Mg	-	15	11.6
11.	Manganese as Mn	--	0.016	0.324
12.	Iron as Fe	-	0.21	1.51
<b>Name of the location : Discharge from Neyveli TPS II</b>				
<b>S.NO</b>	<b>Parameters</b>	<b>Surface water Standard (IS 2296 Class E)</b>	<b>TNPCB Report</b>	<b>NGO report (M/s. Chennai Mettex Lab Private Limited)</b>
1.	Zinc as Zn	-	0.057	BDL
2.	Cadmium as Cd	-	BLQ	BDL
3.	Nickel as Ni	-	0.184	0.10
4.	Lead as Pb	-	BLQ	BDL
5.	Arsenic as As	-	BLQ	BDL
6.	Total Chromium as Cr	-	0.006	BDL

<b>Name of the location : Neyveli PCS store Discharge</b>				
<b>S. NO</b>	<b>Parameters</b>	<b>Surface water Standard (IS 2296 Class E)</b>	<b>TNPCB Report</b>	<b>NGO report (M/s. Chennai Mettlex Lab Private Limited)</b>
7.	Mercury as Hg	-	BLQ	BDL
8.	Selenium as Se	-	BLQ	BDL
9.	Calcium as Ca	-	184	132
10.	Magnesium as Mg	-	46	35
11.	Manganese as Mn	--	5.6	0.027
12.	Iron as Fe	-	1.38	0.77
<b>Name of the location : Opposite to Main Gate of Mine 2 Kootu Kunideer Thittam near Valiyamadevi</b>				
<b>S.NO</b>	<b>Parameters</b>	<b>Surface water Standard ( IS 2296 Class E)</b>	<b>TNPCB Report</b>	<b>NGO report (M/s. Chennai Mettlex Lab Private Limited)</b>
1.	Zinc as Zn	-	0.013	BDL
2.	Cadmium as Cd	-	BLQ	BDL
3.	Nickel as Ni	-	0.053	0.032
4.	Lead as Pb	-	BLQ	0.007
5.	Arsenic as As	-	BLQ	BDL
6.	Total Chromium as Cr	-	BLQ	0.085
7.	Mercury as Hg	-	BLQ	0.003
8.	Selenium as Se	-	BLQ	BDL
9.	Calcium as Ca	-	74	112.2
10.	Magnesium as Mg	-	29	36
11.	Manganese as Mn	--	1.22	0.393
12.	Iron as Fe	-	9.8	20.7
<b>Name of the location : Coal Mine discharged from Mine I</b>				
<b>S.NO</b>	<b>Parameters</b>	<b>Surface water Standard ( IS 2296 Class E)</b>	<b>TNPCB Report</b>	<b>NGO report (M/s. Chennai Mettlex Lab Private Limited)</b>
1.	Zinc as Zn	-	0.029	BDL
2.	Cadmium as Cd	-	BLQ	BDL
3.	Nickel as Ni	-	0.044	BDL
4.	Lead as Pb	-	BLQ	BDL
5.	Arsenic as As	-	BLQ	BDL
6.	Total Chromium as Cr	-	BLQ	BDL
7.	Mercury as Hg	-	BLQ	BDL
8.	Selenium as Se	-	BLQ	BDL
9.	Calcium as Ca	-	136	56
10.	Magnesium as Mg	-	31	14.5
11.	Manganese as Mn	--	0.059	0.035
12.	Iron as Fe	-	0.31	1.54

<b>Name of the location : Neyveli PCS store Discharge</b>				
<b>S. NO</b>	<b>Parameters</b>	<b>Surface water Standard (IS 2296 Class E)</b>	<b>TNPCB Report</b>	<b>NGO report (M/s. Chennai Mettex Lab Private Limited)</b>
<b>Name of the location : Parawnar River carrying NLC Mine 2 Discharge</b>				
<b>S.NO</b>	<b>Parameters</b>	<b>Surface water Standard ( IS 2296 Class E)</b>	<b>TNPCB Report</b>	<b>NGO report (M/s. Chennai Mettex Lab Private Limited)</b>
1.	Zinc as Zn	-	0.034	BDL
2.	Cadmium as Cd	-	BLQ	BDL
3.	Nickel as Ni	-	0.081	0.020
4.	Lead as Pb	-	BLQ	BDL
5.	Arsenic as As	-	BLQ	BDL
6.	Total Chromium as Cr	-	BLQ	BDL
7.	Mercury as Hg	-	BLQ	BDL
8.	Selenium as Se	-	BLQ	BDL
9.	Calcium as Ca	-	77	100
10.	Magnesium as Mg	-	25.3	36.4
11.	Manganese as Mn	--	0.375	0.061
12.	Iron as Fe	-	5.02	1.31
<b>Name of the location : Walaja Lake</b>				
<b>S.NO</b>	<b>Parameters</b>	<b>Surface water Standard ( IS 2296 Class E)</b>	<b>TNPCB Report</b>	<b>NGO report (M/s. Chennai Mettex Lab Private Limited)</b>
1.	Zinc as Zn	-	0.014	0.097
2.	Cadmium as Cd	-	BLQ	BDL
3.	Nickel as Ni	-	0.059	0.093
4.	Lead as Pb	-	BLQ	BDL
5.	Arsenic as As	-	BLQ	BDL
6.	Total Chromium as Cr	-	BLQ	BDL
7.	Mercury as Hg	-	BLQ	BDL
8.	Selenium as Se	-	BLQ	BDL
9.	Calcium as Ca	-	159	104
10.	Magnesium as Mg	-	81	40
11.	Manganese as Mn	--	0.618	0.121
12.	Iron as Fe	-	1.20	1.12
<b>Name of the location : Pond near Ash Pond water discharge to the pond some times ( Aadhandarkollai)</b>				
<b>S.NO</b>	<b>Parameters</b>	<b>Surface water Standard ( IS 2296 Class E)</b>	<b>TNPCB Report</b>	<b>NGO report (M/s. Chennai Mettex Lab Private Limited)</b>
1.	Zinc as Zn	-	0.026	BDL

<b>Name of the location : Neyveli PCS store Discharge</b>				
<b>S. NO</b>	<b>Parameters</b>	<b>Surface water Standard (IS 2296 Class E)</b>	<b>TNPCB Report</b>	<b>NGO report (M/s. Chennai Mettex Lab Private Limited)</b>
2.	Cadmium as Cd	-	BLQ	BDL
3.	Nickel as Ni	-	0.071	0.034
4.	Lead as Pb	-	0.011	BDL
5.	Arsenic as As	-	BLQ	BDL
6.	Total Chromium as Cr	-	BLQ	BDL
7.	Mercury as Hg	-	BLQ	BDL
8.	Selenium as Se	-	BLQ	BDL
9.	Calcium as Ca	-	82	104
10.	Magnesium as Mg	-	22	17
11.	Manganese as Mn	--	1.87	0.731
12.	Iron as Fe	-	BLQ	0.34
<b>Name of the location : Kanjamadanpettai Point ( control Point)</b>				
<b>S.NO</b>	<b>Parameters</b>	<b>Surface water Standard ( IS 2296 Class E)</b>	<b>TNPCB Report</b>	<b>NGO report (M/s. Chennai Mettex Lab Private Limited)</b>
1.	Zinc as Zn	-	0.052	BDL
2.	Cadmium as Cd	-	BLQ	BDL
3.	Nickel as Ni	-	0.014	BDL
4.	Lead as Pb	-	0.035	BDL
5.	Arsenic as As	-	BLQ	BDL
6.	Total Chromium as Cr	-	BLQ	BDL
7.	Mercury as Hg	-	BLQ	BDL
8.	Selenium as Se	-	BLQ	BDL
9.	Calcium as Ca	-	12.1	4.4
10.	Magnesium as Mg	-	4.86	4.6
11.	Manganese as Mn	--	0.324	0.042
12.	Iron as Fe	-	28.3	0.89
<b>Name of the location: Iyyan Lake</b>				
<b>S.NO</b>	<b>Parameters</b>	<b>Surface water Standard ( IS 2296 Class E)</b>	<b>TNPCB Report</b>	<b>NGO report (M/s. Chennai Mettex Lab Private Limited)</b>
1.	Zinc as Zn	-	0.102	BDL
2.	Cadmium as Cd	-	BLQ	BDL
3.	Nickel as Ni	-	0.103	0.031
4.	Lead as Pb	-	0.035	BDL
5.	Arsenic as As	-	BLQ	BDL
6.	Total Chromium as Cr	-	BLQ	BDL
7.	Mercury as Hg	-	BLQ	BDL

<b>Name of the location : Neyveli PCS store Discharge</b>				
<b>S. NO</b>	<b>Parameters</b>	<b>Surface water Standard (IS 2296 Class E)</b>	<b>TNPCB Report</b>	<b>NGO report (M/s. Chennai Mettex Lab Private Limited)</b>
8.	Selenium as Se	-	BLQ	BDL
9.	Calcium as Ca	-	49	36.8
10.	Magnesium as Mg	-	19	11.6
11.	Manganese as Mn	--	0.95	BDL
12.	Iron as Fe	-	0.14	0.06
<b>Name of the location : Karrikuppam Village Fish Pond</b>				
<b>S.NO</b>	<b>Parameters</b>	<b>Surface water Standard ( IS 2296 Class E)</b>	<b>TNPCB Report</b>	<b>NGO report (M/s. Chennai Mettex Lab Private Limited)</b>
1.	Zinc as Zn	-	0.05	BDL
2.	Cadmium as Cd	-	BLQ	BDL
3.	Nickel as Ni	-	0.026	BDL
4.	Lead as Pb	-	BLQ	BDL
5.	Arsenic as As	-	BLQ	BDL
6.	Total Chromium as Cr	-	BLQ	BDL
7.	Mercury as Hg	-	BLQ	BDL
8.	Selenium as Se	-	BLQ	BDL
9.	Calcium as Ca	-	55	80
10.	Magnesium as Mg	-	28.2	49.8
11.	Manganese as Mn	--	0.042	BDL
12.	Iron as Fe	-	0.27	0.89
<b>Name of the location : Canal near the Thermal power Plant ( water discharge from the plant time to time)</b>				
<b>S.NO</b>	<b>Parameters</b>	<b>Surface water Standard ( IS 2296 Class E)</b>	<b>TNPCB Report</b>	<b>NGO report (M/s. Chennai Mettex Lab Private Limited)</b>
1.	Zinc as Zn	-	0.037	BDL
2.	Cadmium as Cd	-	BLQ	BDL
3.	Nickel as Ni	-	0.017	BDL
4.	Lead as Pb	-	0.035	BDL
5.	Arsenic as As	-	BLQ	BDL
6.	Total Chromium as Cr	-	BLQ	BDL
7.	Mercury as Hg	-	BLQ	BDL
8.	Selenium as Se	-	BLQ	BDL
9.	Calcium as Ca	-	81	50
10.	Magnesium as Mg	-	43	54.6
11.	Manganese as Mn	--	5.28	BDL
12.	Iron as Fe	-	1.07	0.93
<b>Name of the location : Mine 1 outlet Vennageni</b>				

<b>Name of the location : Neyveli PCS store Discharge</b>				
<b>S. NO</b>	<b>Parameters</b>	<b>Surface water Standard (IS 2296 Class E)</b>	<b>TNPCB Report</b>	<b>NGO report (M/s. Chennai Mettex Lab Private Limited)</b>
S.NO	Parameters	Surface water Standard ( IS 2296 Class E)	TNPCB Report	NGO not furnished the report
1.	Zinc as Zn	-	0.550	
2.	Cadmium as Cd	-	BLQ	
3.	Nickel as Ni	-	0.355	
4.	Lead as Pb	-	0.006	
5.	Arsenic as As	-	BLQ	
6.	Total Chromium as Cr	-	BLQ	
7.	Mercury as Hg	-	BLQ	
8.	Selenium as Se	-	BLQ	
9.	Calcium as Ca	-	61	
10.	Magnesium as Mg	-	15	
11.	Manganese as Mn	--	0.915	
12.	Iron as Fe	-	5.3	
<b>Name of the location : Ramapuri, Mantharakuppam Vadakkuvellur</b>				
<b>S.NO</b>	<b>Parameters</b>	<b>Surface water Standard ( IS 2296 Class E)</b>	<b>TNPCB Report</b>	<b>NGO report (M/s.Tamilnadu Test House Private Limited)</b>
1.	Zinc as Zn	-	0.014	BQL
2.	Cadmium as Cd	-	BLQ	BQL
3.	Nickel as Ni	-	0.014	BQL
4.	Lead as Pb	-	0.006	BQL
5.	Arsenic as As	-	BLQ	BQL
6.	Total Chromium as Cr	-	BLQ	BQL
7.	Mercury as Hg	-	BLQ	0.02
8.	Selenium as Se	-	BLQ	0.024
9.	Calcium as Ca	-	115	196.39
10.	Magnesium as Mg	-	24	38.89
11.	Manganese as Mn	--	0.029	BQL
12.	Iron as Fe	-	2.62	0.21
<b>Name of the location : Vadakku vellur Ammeri</b>				
<b>S.NO</b>	<b>Parameters</b>	<b>Surface water Standard ( IS 2296 Class E)</b>	<b>TNPCB Report</b>	<b>NGO report (M/s.Tamilnadu Test House Private Limited)</b>
1.	Zinc as Zn	-	0.008	BQL
2.	Cadmium as Cd	-	BLQ	BQL

<b>Name of the location : Neyveli PCS store Discharge</b>				
<b>S. NO</b>	<b>Parameters</b>	<b>Surface water Standard (IS 2296 Class E)</b>	<b>TNPCB Report</b>	<b>NGO report (M/s. Chennai Mettex Lab Private Limited)</b>
3.	Nickel as Ni	-	0.011	BQL
4.	Lead as Pb	-	0.006	BQL
5.	Arsenic as As	-	BLQ	BQL
6.	Total Chromium as Cr	-	BLQ	BQL
7.	Mercury as Hg	-	BLQ	BQL
8.	Selenium as Se	-	BLQ	0.014
9.	Calcium as Ca	-	113	68.14
10.	Magnesium as Mg	-	27	14.58
11.	Manganese as Mn	--	0.012	BQL
12.	Iron as Fe	-	BLQ	0.23
<b>Name of the location : NNTPS outlet near Thropathi Amman Temple.</b>				
<b>S.NO</b>	<b>Parameters</b>	<b>Surface water Standard ( IS 2296 Class E)</b>	<b>TNPCB Report</b>	<b>NGO report (M/s.Tamilnadu Test House Private Limited)</b>
1.	Zinc as Zn	-	0.0124	BQL
2.	Cadmium as Cd	-	BLQ	BQL
3.	Nickel as Ni	-	0.117	BQL
4.	Lead as Pb	-	0.006	BQL
5.	Arsenic as As	-	BLQ	BQL
6.	Total Chromium as Cr	-	BLQ	BQL
7.	Mercury as Hg	-	BLQ	0.01
8.	Selenium as Se	-	BLQ	0.024
9.	Calcium as Ca	-	169	84.17
10.	Magnesium as Mg	-	63	34.08
11.	Manganese as Mn	--	6.68	BQL
12.	Iron as Fe	-	5.3	0.24
<b>Name of the location: Central store</b>				
<b>S.NO</b>	<b>Parameters</b>	<b>Surface water Standard ( IS 2296 Class E)</b>	<b>TNPCB Report</b>	<b>NGO report (M/s.Tamilnadu Test House Private Limited)</b>
1.	Zinc as Zn	-	0.014	BQL
2.	Cadmium as Cd	-	BLQ	BQL
3.	Nickel as Ni	-	0.005	BQL
4.	Lead as Pb	-	0.006	BQL
5.	Arsenic as As	-	BLQ	BQL
6.	Total Chromium as Cr	-	BLQ	BQL
7.	Mercury as Hg	-	BLQ	0.03
8.	Selenium as Se	-	BLQ	0.024

<b>Name of the location : Neyveli PCS store Discharge</b>				
<b>S. NO</b>	<b>Parameters</b>	<b>Surface water Standard (IS 2296 Class E)</b>	<b>TNPCB Report</b>	<b>NGO report (M/s. Chennai Mettex Lab Private Limited)</b>
9.	Calcium as Ca	-	8	140.28
10.	Magnesium as Mg	-	2.67	34.03
11.	Manganese as Mn	--	0.012	BQL
12.	Iron as Fe	-	3.27	0.21
<b>Name of the location: TPS outlet Karuvetti</b>				
<b>S.NO</b>	<b>Parameters</b>	<b>Surface water Standard ( IS 2296 Class E)</b>	<b>TNPCB Report</b>	<b>NGO report (M/s.Tamilnadu Test House Private Limited)</b>
1.	Zinc as Zn	-	0.1	BQL
2.	Cadmium as Cd	-	BLQ	BQL
3.	Nickel as Ni	-	0.117	BQL
4.	Lead as Pb	-	BLQ	BQL
5.	Arsenic as As	-	BLQ	BQL
6.	Total Chromium as Cr	-	BLQ	BQL
7.	Mercury as Hg	-	BLQ	BQL
8.	Selenium as Se	-	BLQ	0.124
9.	Calcium as Ca	-	142	104.21
10.	Magnesium as Mg	-	25	31.60
11.	Manganese as Mn	--	5	BQL
12.	Iron as Fe	-	2.24	0.21
<b>Name of the location: Muppaneri</b>				
<b>S.NO</b>	<b>Parameters</b>	<b>Surface water Standard ( IS 2296 Class E)</b>	<b>TNPCB Report</b>	<b>NGO report (M/s.Tamilnadu Test House Private Limited)</b>
1.	Zinc as Zn	-	0.006	BQL
2.	Cadmium as Cd	-	BLQ	BQL
3.	Nickel as Ni	-	BLQ	BQL
4.	Lead as Pb	-	BLQ	BQL
5.	Arsenic as As	-	BLQ	BQL
6.	Total Chromium as Cr	-	BLQ	BQL
7.	Mercury as Hg	-	BLQ	BQL
8.	Selenium as Se	-	BLQ	0.047
9.	Calcium as Ca	-	66	68.06
10.	Magnesium as Mg	-	20.4	12.16
11.	Manganese as Mn	--	0.043	BQL
12.	Iron as Fe	-	0.76	0.24
<b>Name of the location: TPS 2 outlet</b>				
<b>S.NO</b>	<b>Parameters</b>	<b>Surface water</b>	<b>TNPCB Report</b>	<b>NGO report (M/s.Tamilnadu</b>

<b>Name of the location : Neyveli PCS store Discharge</b>				
<b>S. NO</b>	<b>Parameters</b>	<b>Surface water Standard (IS 2296 Class E)</b>	<b>TNPCB Report</b>	<b>NGO report (M/s. Chennai Mettex Lab Private Limited)</b>
		Standard (IS 2296 Class E)		Test House Private Limited)
1.	Zinc as Zn	-	0.057	BQL
2.	Cadmium as Cd	-	BLQ	BQL
3.	Nickel as Ni	-	0.184	BQL
4.	Lead as Pb	-	BLQ	BQL
5.	Arsenic as As	-	BLQ	BQL
6.	Total Chromium as Cr	-	0.006	BQL
7.	Mercury as Hg	-	BLQ	0.14
8.	Selenium as Se	-	BLQ	0.021
9.	Calcium as Ca	-	184	124.25
10.	Magnesium as Mg	-	46	41.32
11.	Manganese as Mn	--	5.6	BQL
12.	Iron as Fe	-	1.38	0.27

**COMPARISON OF HEAVY METALS IN GROUND WATER SAMPLES  
COLLECTED BY TNPCB WITH NGO REPORT**

**All Parameters are in Mg/L**

<b>Name of the location : Aadhandarkollai Borewell near Thiravupathi Amman Temple 300m away from ash pond</b>				
S.NO	Parameters	Drinking water Standard ( IS 10500 2012)	TNPCB Report	NGO report (M/s. Chennai Mettex Lab Private Limited)
1.	pH at 25°C	6.5-8.5	6.78	6.58
2.	Electrical Conductivity	-	172	1.729
3.	Total Dissolved Solids at 180 °C	500	102	<b>1002</b>
4.	Turbidity	1	BLQ	<b>56</b>
5.	Total Suspended Solids at 105 °C	--		28
6.	Oil & Grease	--	--	--
7.	Fluoride as F	1	NA	<b>1.11</b>
8.	Chloride as Cl	250	18.9	126
9.	Sulphates as SO4	200	7.0	93
10.	Zinc as Zn	5	0.007	BDL
11.	Cadmium as Cd	0.003	BLQ	BDL
12.	Nickel as Ni	0.02	<b>0.020</b>	0.013
13.	Lead as Pb	0.01	0.011	BDL
14.	Arsenic as As	0.01	BLQ	BDL
15.	Chromium as Cr	0.05	BLQ	BDL
16.	Mercury as Hg	0.001	BLQ	BDL
17.	Selenium as Se	0.01	BLQ	BDL
18.	Boron as B	0.5	BLQ	0.251
19.	Total Hardness as CaCO3	200	41	<b>725</b>
20.	Calcium as Ca	75	12.5	<b>252</b>
21.	Magnesium as Mg	30	2.4	23
22.	Manganese as Mn	0.1	BLQ	<b>0.426</b>
23.	Sulphide as S	0.05	BLQ	BDL
24.	Aluminium as Al	0.03	BLQ	0.015
25.	Total Alkalinity as CaCO3	200	49.5	10.2
26.	Iron as Fe	0.3	BLQ	<b>0.79</b>
27.	Sodium as Na	-	9.2	
28.	Potassium as K	-	BLQ	6.22

29.	Biochemical Oxygen Demand(BOD) for 3 days at 27°C	-	BLQ	--
30.	Chemical Oxygen Demand (COD)	-	BLQ	--
<b>Name of the location : Vanadhirayapuram Village 100 meters from the Mine</b>				
S.NO	Parameters	Drinking water Standard ( IS 10500 2012)	TNPCB Report	NGO report (M/s. Chennai Mettex Lab Private Limited)
1.	pH at 25°C	6.5-8.5	7.84	6.83
2.	Electrical Conductivity	-	252	8.21
3.	Total Dissolved Solids at 180 °C	500	134	459
4.	Turbidity	1	7	<0.5NTU
5.	Total Suspended Solids at 105 °C	--		BDL
6.	Oil & Grease	--	--	--
7.	Fluoride as F	1	BLQ	0.71
8.	Chloride as Cl	250	14.1	119
9.	Sulphates as SO4	200	24.4	39.6
10.	Zinc as Zn	5	0.053	BDL
11.	Cadmium as Cd	0.003	BLQ	BDL
12.	Nickel as Ni	0.02	0.026	BDL
13.	Lead as Pb	0.01	0.02	BDL
14.	Arsenic as As	0.01	BLQ	BDL
15.	Chromium as Cr	0.05	BLQ	BDL
16.	Mercury as Hg	0.001	BLQ	BDL
17.	Selenium as Se	0.01	BLQ	BDL
18.	Boron as B	0.5	BLQ	<b>0.056</b>
19.	Total Hardness as CaCO3	200	119	190
20.	Calcium as Ca	75	28	60.9
21.	Magnesium as Mg	30	12	9.2
22.	Manganese as Mn	0.1	0.019	BDL
23.	Sulphide as S	0.05	BLQ	BDL
24.	Aluminium as Al	0.03	0.023	BDL
25.	Total Alkalinity as CaCO3	200	9.9	73.4
26.	Iron as Fe	0.3	BLQ	0.06
27.	Sodium as Na	-	38.4	--
28.	Potassium as K	-	2.4	6.22
29.	Biochemical Oxygen Demand(BOD) for 3 days at 27°C	-	BLQ	--
30.	Chemical Oxygen Demand (COD)	-	BLQ	--

<b>Name of the location : Ayikuppam – Kullanchavadi Bore well (Control Point)</b>				
S.NO	Parameters	Drinking water Standard ( IS 10500 2012)	TNPCB Report	NGO report (M/s. Chennai Mettex Lab Private Limited)
1.	pH at 25°C	6.5-8.5	8.06	6.89
2.	Electrical Conductivity	-	426	450
3.	Total Dissolved Solids at 180 °C	500	263	247
4.	Turbidity	1	1.0	<0.5NTU
5.	Total Suspended Solids at 105 °C	--		BDL
6.	Oil & Grease	--	--	--
7.	Fluoride as F	1	NA	0.59
8.	Chloride as Cl	250	66	64
9.	Sulphates as SO4	200	34.8	21.3
10.	Zinc as Zn	5	0.202	BDL
11.	Cadmium as Cd	0.003	BLQ	BDL
12.	Nickel as Ni	0.02	<b>0.024</b>	BDL
13.	Lead as Pb	0.01	<b>0.02</b>	BDL
14.	Arsenic as As	0.01	BLQ	BDL
15.	Chromium as Cr	0.05	BLQ	BDL
16.	Mercury as Hg	0.001	BLQ	BDL
17.	Selenium as Se	0.01	BLQ	BDL
18.	Boron as B	0.5	0.315	0.102
19.	Total Hardness as CaCO3	<b>200</b>	80.6	135
20.	Calcium as Ca	<b>75</b>	22.6	31.2
21.	Magnesium as Mg	30	5.8	13.2
22.	Manganese as Mn	0.1	0.023	BDL
23.	Sulphide as S	0.05	BLQ	BDL
24.	Aluminium as Al	0.03	0.024	0.013
25.	Total Alkalinity as CaCO3	200	79.2	73.4
26.	Iron as Fe	0.3	BLQ	0.02
27.	Sodium as Na	-	34	--
28.	Potassium as K	-	1.8	2.39
29.	Biochemical Oxygen Demand(BOD) for 3 days at 27°C	-	BLQ	--
30.	Chemical Oxygen Demand (COD)	-	BLQ	--
<b>Name of the location: NLC Pipe Water ( Drinking Water Supplied by NLC Management )</b>				
S.NO	Parameters	Drinking water Standard ( IS 10500 2012)	TNPCB Report	NGO report (M/s. Chennai Mettex Lab Private Limited)
1.	pH at 25°C	6.5-8.5	7.13	5.64

2.	Electrical Conductivity	-	1092	368
3.	Total Dissolved Solids at 180 °C	500	<b>678</b>	202
4.	Turbidity	1	BLQ	<0.5NTU
5.	Total Suspended Solids at 105 °C	--		BDL
6.	Oil & Grease	--	--	--
7.	Fluoride as F	1	0.43	0.48
8.	Chloride as Cl	250	137	39.3
9.	Sulphates as SO4	200	<b>209</b>	15.8
10.	Zinc as Zn	5	0.113	BDL
11.	Cadmium as Cd	0.003	BLQ	BDL
12.	Nickel as Ni	0.02	0.108	BDL
13.	Lead as Pb	0.01	BLQ	BDL
14.	Arsenic as As	0.01	BLQ	BDL
15.	Chromium as Cr	0.05	BLQ	BDL
16.	Mercury as Hg	0.001	BLQ	BDL
17.	Selenium as Se	0.01	BLQ	BDL
18.	Boron as B	0.5	0.490	0.121
19.	Total Hardness as CaCO3	200	<b>298</b>	115
20.	Calcium as Ca	75	<b>79</b>	30.4
21.	Magnesium as Mg	30	24	9.4
22.	Manganese as Mn	0.1	0.030	BDL
23.	Sulphide as S	0.05	BLQ	BDL
24.	Aluminium as Al	0.03	0.025	<b>0.031</b>
25.	Total Alkalinity as CaCO3	200	29.7	91.8
26.	Iron as Fe	0.3	BLQ	0.02
27.	Sodium as Na	-	134	--
28.	Potassium as K	-	6.2	1.388
29.	Biochemical Oxygen Demand (BOD) for 3 days at 27°C	-	BLQ	--
30.	Chemical Oxygen Demand (COD)	-	BLQ	--

**Name of the location: Vellankulam**

S.NO	Parameters	Drinking water Standard (IS 10500 2012)	TNPCB Report	NGO report (M/s. Chennai Mettex Lab Private Limited)
1.	pH at 25°C	6.5-8.5	7.81	6.63
2.	Electrical Conductivity	-	186	198
3.	Total Dissolved Solids at 180 °C	500	115	109
4.	Turbidity	1	--	<0.5NTU
5.	Total Suspended Solids at 105 °C	--	--	BDL

6.	Oil & Grease	--	--	--
7.	Fluoride as F	1	NA	BDL
8.	Chloride as Cl	250	14.1	16.9
9.	Sulphates as SO4	200	14	4.5
10.	Zinc as Zn	5	0.044	<b>5.903</b>
11.	Cadmium as Cd	0.003	BLQ	BDL
12.	Nickel as Ni	0.02	0.024	BDL
13.	Lead as Pb	0.01	BLQ	BDL
14.	Arsenic as As	0.01	BLQ	BDL
15.	Chromium as Cr	0.05	BLQ	BDL
16.	Mercury as Hg	0.001	BLQ	BDL
17.	Selenium as Se	0.01	BLQ	BDL
18.	Boron as B	0.5	BLQ	0.057
19.	Total Hardness as CaCO3	200	68.5	68
20.	Calcium as Ca	75	16.5	17.6
21.	Magnesium as Mg	30	6.5	5.1
22.	Manganese as Mn	0.1	BLQ	BDL
23.	Sulphide as S	0.05	BLQ	BDL
24.	Aluminium as Al	0.03	<b>0.130</b>	BDL
25.	Total Alkalinity as CaCO3	200	29.7	53.0
26.	Iron as Fe	0.3	BLQ	0.02
27.	Sodium as Na	-	11.4	--
28.	Potassium as K	-	1.8	2.15
29.	Biochemical Oxygen Demand (BOD) for 3 days at 27°C	-	BLQ	--
30.	Chemical Oxygen Demand (COD)	-	BLQ	--

**Name of the location : Pudukuppam village**

S.No	Parameters	Drinking water Standard (IS 10500 2012)	TNPCB Report	NGO report (M/s. Chennai Mettex Lab Private Limited)
1.	pH at 25°C	6.5-8.5	8.12	7.92
2.	Electrical Conductivity	-	825	908
3.	Total Dissolved Solids at 180 °C	500	<b>510</b>	<b>508</b>
4.	Turbidity	1	BLQ	<0.5NTU
5.	Total Suspended Solids at 105 °C	--	--	BDL
6.	Oil & Grease	--	--	--
7.	Fluoride as F	1	0.27	BDL
8.	Chloride as Cl	250	141	87.7
9.	Sulphates as SO4	200	97	52
10.	Zinc as Zn	5	0.013	BDL

11.	Cadmium as Cd	0.003	BLQ	BDL
12.	Nickel as Ni	0.02	0.01	BDL
13.	Lead as Pb	0.01	BLQ	BDL
14.	Arsenic as As	0.01	BLQ	BDL
15.	Chromium as Cr	0.05	BLQ	BDL
16.	Mercury as Hg	0.001	BLQ	BDL
17.	Selenium as Se	0.01	BLQ	BDL
18.	Boron as B	0.5	0.349	0.062
19.	Total Hardness as CaCO <sub>3</sub>	200	<b>226</b>	<b>282</b>
20.	Calcium as Ca	75	52	65.7
21.	Magnesium as Mg	30	23	28.6
22.	Manganese as Mn	0.1	0.232	0.068
23.	Sulphide as S	0.05	BLQ	BDL
24.	Aluminium as Al	0.03	0.016	0.010
25.	Total Alkalinity as CaCO <sub>3</sub>	200	153	<b>249.2</b>
26.	Iron as Fe	0.3	BLQ	0.23
27.	Sodium as Na	-	86	--
28.	Potassium as K	-	3.3	14.16
29.	Biochemical Oxygen Demand (BOD) for 3 days at 27°C	-	3.2	--
30.	Chemical Oxygen Demand (COD)	-	8	--

**Name of the location : Pudukuppam village Pipe Water**

S.No	Parameters	Drinking water Standard (IS 10500 2012)	TNPCB Report	NGO report (M/s. Chennai Mettex Lab Private Limited)
1.	pH at 25°C	6.5-8.5	8.26	7.83
2.	Electrical Conductivity	-	786	888
3.	Total Dissolved Solids at 180 °C	500	488	497
4.	Turbidity	1	BLQ	<0.5NTU
5.	Total Suspended Solids at 105 °C	--	--	BDL
6.	Oil & Grease	--	--	--
7.	Fluoride as F	1	NA	0.59
8.	Chloride as Cl	250	108	90.6
9.	Sulphates as SO <sub>4</sub>	200	72	68.6
10.	Zinc as Zn	5	0.013	BDL
11.	Cadmium as Cd	0.003	BLQ	BDL
12.	Nickel as Ni	0.02	0.01	BDL
13.	Lead as Pb	0.01	BLQ	BDL
14.	Arsenic as As	0.01	BLQ	BDL
15.	Chromium as Cr	0.05	BLQ	BDL

16.	Mercury as Hg	0.001	BLQ	BDL
17.	Selenium as Se	0.01	BLQ	BDL
18.	Boron as B	0.5	0.342	0.070
19.	Total Hardness as CaCO <sub>3</sub>	200	<b>302</b>	<b>318</b>
20.	Calcium as Ca	75	82	<b>81</b>
21.	Magnesium as Mg	30	23.3	28
22.	Manganese as Mn	0.1	0.024	0.076
23.	Sulphide as S	0.05	BLQ	BDL
24.	Aluminium as Al	0.03	BLQ	BDL
25.	Total Alkalinity as CaCO <sub>3</sub>	200	193	<b>208</b>
26.	Iron as Fe	0.3	BLQ	0.18
27.	Sodium as Na	-	63	--
28.	Potassium as K	-	5.3	8.03
29.	Biochemical Oxygen Demand (BOD) for 3 days at 27°C	-	BLQ	--
30.	Chemical Oxygen Demand (COD)	-	BLQ	--

**Name of the location : Karrikuppam Village**

S.No	Parameters	Drinking water Standard (IS 10500 2012)	TNPCB Report	NGO report (M/s. Chennai Mettex Lab Private Limited)
1.	pH at 25°C	6.5-8.5	6.94	7.27
2.	Electrical Conductivity	-	509	1555
3.	Total Dissolved Solids at 180 °C	500	312	902
4.	Turbidity	1	NA	18 NTU
5.	Total Suspended Solids at 105 °C	--	--	BDL
6.	Oil & Grease	--	--	--
7.	Fluoride as F	1	NA	1.15
8.	Chloride as Cl	250	37.7	192
9.	Sulphates as SO <sub>4</sub>	200	50.4	128.7
10.	Zinc as Zn	5	BLQ	BDL
11.	Cadmium as Cd	0.003	BLQ	BDL
12.	Nickel as Ni	0.02	0.005	BDL
13.	Lead as Pb	0.01	BLQ	BDL
14.	Arsenic as As	0.01	BLQ	BDL
15.	Chromium as Cr	0.05	BLQ	BDL
16.	Mercury as Hg	0.001	BLQ	BDL
17.	Selenium as Se	0.01	BLQ	BDL
18.	Boron as B	0.5	0.301	0.144
19.	Total Hardness as CaCO <sub>3</sub>	<b>200</b>	143	<b>415</b>
20.	Calcium as Ca	<b>75</b>	32	<b>92</b>

21.	Magnesium as Mg	30	15	<b>44.9</b>
22.	Manganese as Mn	0.1	0.187	<b>0.101</b>
23.	Sulphide as S	0.05	BLQ	BDL
24.	Aluminium as Al	0.03	0.015	BDL
25.	Total Alkalinity as CaCO <sub>3</sub>	200	104	<b>267.8</b>
26.	Iron as Fe	0.3	BLQ	<b>0.39</b>
27.	Sodium as Na	-	42	--
28.	Potassium as K	-	2.4	47
29.	Biochemical Oxygen Demand (BOD) for 3 days at 27°C	-	BLQ	--
30.	Chemical Oxygen Demand (COD)	-	8	--
<b>Name of the location: Tholkappiar Nagar</b>				
S.No	Parameters	Drinking water Standard (IS 10500 2012)	TNPCB Report	NGO report (M/s.Tamilnadu Test House Private Limited)
1.	pH at 25°C	6.5-8.5	7.53	7.691
2.	Electrical Conductivity	-	221	423.63
3.	Total Dissolved Solids at 180 °C	500	128	237.23
4.	Turbidity	1	1.7	<b>7.00</b>
5.	Total Suspended Solids at 105 °C	--	--	9.00
6.	Oil & Grease	--	--	--
7.	Fluoride as F	1	BLQ	BQL
8.	Chloride as Cl	250	18.8	47.86
9.	Sulphates as SO <sub>4</sub>	200	6.4	38.64
10.	Zinc as Zn	5	BLQ	BQL
11.	Cadmium as Cd	0.003	BLQ	BQL
12.	Nickel as Ni	0.02	0.024	BQL
13.	Lead as Pb	0.01	BLQ	BQL
14.	Arsenic as As	0.01	BLQ	BQL
15.	Chromium as Cr	0.05	BLQ	BQL
16.	Mercury as Hg	0.001	BLQ	<b>0.25</b>
17.	Selenium as Se	0.01	BLQ	<b>0.014</b>
18.	Boron as B	0.5	<0.1	BQL
19.	Total Hardness as CaCO <sub>3</sub>	200	61	100.00
20.	Calcium as Ca	75	17.4	24.05
21.	Magnesium as Mg	30	4.4	9.72
22.	Manganese as Mn	0.1	0.012	BQL
23.	Sulphide as S	0.05	BLQ	NA
24.	Aluminium as Al	0.03	BLQ	BDL
25.	Total Alkalinity as CaCO <sub>3</sub>	200	54	102.00

26.	Iron as Fe	0.3	0.19	0.19
27.	Sodium as Na	-	16.7	--
28.	Potassium as K	-	2.4	14.80
29.	Biochemical Oxygen Demand (BOD) for 3 days at 27°C	-	BLQ	--
30.	Chemical Oxygen Demand (COD)	-	4	31.08

**COMPARISON OF HEAVY METALS IN SOIL SAMPLES COLLECTED BY TNPCB WITH NGO REPORT**

<b>Name of the Location : Karumbu Thottam Vadakuvellur</b>				
Sl.No.	Parameters	Soil standards	TNPCB committee Results	NGO report ( Tamil nadu Test Home Private Limited )
1	Zinc as Zn	250	<b>492.7</b>	78.79
2	Nickel as Ni	45	<b>99.62</b>	19.17
3	Cadmium as Cd	1.4	1.25	0.30
4	Lead as Pb	70	8.80	3.02
5	Arsenic as As	12	BLQ	BQL
6	Total Chromium as Cr	64	15.50	BQL
7	Mercury as Hg	6.6	BLQ	0.23
8	Selenium as Se	1.0	BLQ	<b>24.12</b>
<b>Name of the Location: Vadakku Vellore By pass</b>				
Sl.No.	Parameters	Soil standards	TNPCB Results	NGO not furnished the report
1.	Zinc as Zn	250	12.37	
2.	Nickel as Ni	45	13.94	
3.	Cadmium as Cd	1.4	BLQ	
4.	Lead as Pb	70	20.32	
5.	Arsenic as As	12	3.60	
6.	Total Chromium as Cr	64	7.62	
7.	Mercury as Hg	6.6	<0.04	
8.	Selenium as Se	1.0	<0.5	
<b>Name of the Location: Agriculture Land near Iyyan Lake</b>				
Sl.No.	Parameters	Soil standards	TNPCB Results	NGO report (Chennai Mettex Lab Pvt Limited )
1.	Zinc as Zn	250	1.53	152
2.	Nickel as Ni	45	3.63	20.5
3.	Cadmium as Cd	1.4	1.12	BDL
4.	Lead as Pb	70	1.83	BDL
5.	Arsenic as As	12	BLQ	BDL
6.	Total Chromium as Cr	64	3.9	78.6
7.	Mercury as Hg	6.6	BLQ	BDL
8.	Selenium as Se	1.0	BLQ	BDL

<b>Name of the Location: Paddy Filed within one Kilometer from the stack of NNTPS</b>				
Sl.No.	Parameters	Soil standards	TNPCB Results	NGO report (Chennai Mettex Lab Pvt Limited )
1.	Zinc as Zn	250	9.35	205
2.	Nickel as Ni	45	2.20	87.4
3.	Cadmium as Cd	1.4	BLQ	BDL
4.	Lead as Pb	70	9.58	BDL
5.	Arsenic as As	12	BLQ	BDL
6.	Total Chromium as Cr	64	BLQ	21.6
7.	Mercury as Hg	6.6	BLQ	BDL
8.	Selenium as Se	1.0	BLQ	BDL
<b>Name of the Location: Karikuppam Village agricultural land near Thermal Power Plant</b>				
Sl.No.	Parameters	Soil standards	TNPCB Results	NGO report (Chennai Mettex Lab Pvt Limited )
1.	Zinc as Zn	250	16.01	20.8
2.	Nickel as Ni	45	6.20	4.68
3.	Cadmium as Cd	1.4	1.23	BDL
4.	Lead as Pb	70	10.54	BDL
5.	Arsenic as As	12	BLQ	BDL
6.	Total Chromium as Cr	64	6.72	BDL
7.	Mercury as Hg	6.6	BLQ	BDL
8.	Selenium as Se	1.0	BLQ	BDL

**BEFORE THE HON'BLE NATIONAL  
GREEN TRIBUNAL  
SOUTHERN ZONE, CHENNAI.**

**Original Application No. 107 of 2023**

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

And

The Managing Director  
NLC India Limited,  
Chennai and Ors.

.....Respondents

**REPORT FILED ON BEHALF OF THE  
5<sup>TH</sup> RESPONDNET – TAMIL NADU  
POLLUTION CONTROL BOARD**

**Advocate for Respondent: TNPCB  
Thiru.S. Sai Sathya Jith,  
Advocate, Chennai.**

**Date:14.03.2024.**

**Date of hearing on:15.03.2024**