

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

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".

Vs.

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

...Respondents

INDEX

S. No	Description	Page No.
1.	ADDITIONAL REPORT FILED ON BEHALF OF THE FIFTH RESPONDENT – TAMIL NADU POLLUTION CONTROL BOARD	1 – 6
2.	ANNEXURE – 1	7 – 25



**Filed by
Thiru. S. Sai Sathya Jith,
Advocate, Chennai.**

**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

**ADDITIONAL 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 the Hon'ble NGT (SZ), Chennai, in its order dated 15.03.2024 stated that,

" 2. The TNPCB report says the samples collected in the localities concerned, Mercury and Selenium are Below the Limit of Quantification (BLQ) level. The report of the CPCB also says the same. As the very same issue regarding the Mercury content in the drinking water, which is reported in the newspaper based on the lab report furnished by the NGO, to eliminate any kind of doubt, we direct the TNPCB to collect samples again and send them to the same lab who had furnished the report to the NGO, based on which, the news

R. Rajamanickam
20/5/2024
ADDITIONAL CHIEF ENVIRONMENTAL ENGINEER
TAMIL NADU POLLUTION CONTROL BOARD

item was published. The same sample can be tested by the reports and furnish it before the next date of hearing”.

3. It is respectfully submitted that as per the order dated 15.3.2024 by the Hon'ble NGT(SZ), Chennai, the report is submitted herein. It is submitted that the NGO have tested the samples in M/s. Chennai Mettlex Lab Private Limited, Chennai and M/s. Tamilnadu Test House, Chennai.
4. It is respectfully submitted that the water and soil samples were collected by the team of officials of TNPCB on 03.04.2024 at the same locations where the NGO have collected the samples and sent them to the following laboratories for analysis.
 1. Chennai Mettlex Lab Private Limited, Chennai.
 2. Tamilnadu Test House, Chennai.
 3. Advanced Environmental Lab, TNPCB, Chennai/Cuddalore.
 4. IIT Madras CUBE, Taramani, Chennai
5. It is submitted that the comparison statement is enclosed as **ANNEXURE – I** and the following are the inferences submitted herein.

I. SURFACE WATER

- A. Surface water samples are collected on 03.04.2024 from the following locations:
 - a. Discharge from Neyveli TPS-II
 - b. Opposite to Main Gate of NLC Mine-II Kootu Kudineer Thitam near Valiyamadevi
 - c. Walaja Lake
 - d. Iyyan Lake
 - e. Vadakku vellur Ammeri
 - f. TPS-II Outlet llocation

It is submitted that as per the TNPCB test reports the mercury levels are 0.027mg/l, 0.014 mg/l, 0.018 mg/l, 0.01 mg/l, 0.019 mg/l, 0.027 mg/l respectively in the above places and all other heavy metals values are within the limit as per standards IS: 2296:1982 standard (Class E – Water for irrigation, industrial cooling and controlled waste disposal). As per the reports of private labs reports mercury and selenium are below limit of quantification in the above locations.


 20/5/2024
 ADDITIONAL CHIEF ENVIRONMENTAL ENGINEER
 TAMIL NADU POLLUTION CONTROL BOARD
 No. 78, MOUNT SALAI CHUNDRY

B. Surface water samples are also collected on 03.04.2024 from the following locations:

- a. Discharge from NNTPS
- b. Direct Discharge from TPS-I
- c. Coal Mine Discharged from Mine-I
- d. Paravanar River Carrying NLC Mine-II discharge
- e. Artificial lake located at North side of TPS-II south side of NNTPS, west side of abandoned ash pond, Kanjamanadanpettai Pond water
- f. Karrikuppam Village Fish Pond
- g. Buckingham canal near the thermal power plant, Ramopuri, Mantharakuppam Vadakkuvellur
- h. Vadakkuvellur Pond near Sivan koil
- i. Muppaneri village

It is submitted that as per the TNPCB report and reports of private labs mercury and selenium levels are below limit of quantification and all other heavy metals values are within the limit as per standards IS: 2296:1982 standard (Class E – Water for irrigation, industrial cooling and controlled waste disposal).

C. There is no flow of surface water during the time of sample collection on 03.04.2024 at the following places

- a. Centre store
- b. TPS outlet Karuvetti
- c. Neyveli PCS store discharge

Hence samples could not be collected at these places.

II. GROUND WATER

A. Ground water samples collected from the following locations

- a. Bore well located near the OHT Thandapani koil street
- b. Kaikalarkuppam
- c. Vanadhirayapuram Village
- d. NLC supplied water at U. Mangalam Tank
- e. Karikuppam Village
- f. Tholkappaiyarnagar

It is submitted that as per the TNPCB report and Reports of private labs the


 20/5/2024
 ADDITIONAL CHIEF ENVIRONMENTAL ENGINEER
 TAMIL NADU POLLUTION CONTROL BOARD
 No.76 MOUNT SAJAL GUINDY

mercury and selenium are below limit of quantification in the above places.

B. Ground water samples were also collected from the following location

- a. Vellankulam village
- b. Pudukuppam village

It is submitted that as per the TNPCB report mercury level is 0.005 mg/l and 0.007 mg/l respectively as against the standard of 0.001 mg/l and selenium level is below limit of quantification. As per reports of private labs mercury and selenium levels are below limit of quantification.

III. SOIL SAMPLES

It is respectfully submitted that soil samples are collected in the following locations

- a. Karumbu Thottam – Vadakuvellur
- b. Vadakku Vellore Bye Pass
- c. Agriculture land near Iyyan Lake
- d. Paddy field within one kilometre from the stack of NNTPS
- e. Karikuppam village agricultural land near Thermal Power Plant
- f. Pallitheru Vadakku Vellore
- i. It is respectfully submitted that since there is no IS standards for soil quality, Canadian soil quality guidelines for the protection of environmental and human health is compared with.
- ii. It is submitted that in the soil samples collected at Vadakuvellur Karumbu Thottam, as per the TNPCB report selenium level is 2.31 mg/Kg as against the standard of 1.0 mg/kg and all other parameters are within the limit as per standards. As per the private lab (M/s. Tamilnadu House Private Limited) report arsenic level is 16.7 mg/kg as against the standard of 12 mg/kg and all other parameters are within the limit as per standards.
- iii. It is submitted that in the samples collected at Vadakuvellur By-pass, as per the TNPCB Lab report zinc level is 459 mg/kg as against the standard of 250 mg/kg, the nickel level is 51.54 mg/kg as against the standard of 45 mg/kg and the selenium level is 6.77 mg/kg as against the standard of 1.0 mg/kg. All other parameters are within the limits as per standards. As per the private lab (M/s. Chennai Mettex Lab Private Limited) report the zinc level

is 600mg/Kg as against the standard of 250 mg/kg and all other parameters are within the limit as per standards.

- iv. It is submitted that in the samples collected at Agriculture Land near Iyyan lake and paddy field within one kilometer from the stack of NNTPS, as per the TNPCB report all the parameters are within the limit as per standards. As per Private lab (M/s. Tamilnadu House Private Limited) report arsenic level is 15.4 mg/Kg as against the standard of 12 mg/kg and Total Chromium level is 67.7 mg/Kg as against the standard of 64 mg/kg and all other parameters are within the limit.
 - v. It is submitted that in the samples collected at Karikuppam village agricultural land near Thermal Power Plant and Pallitheru Vadakku Vellore, as per TNPCB and Private labs reports heavy metals parameters are within the limit as per standards.
6. It is respectfully submitted that from report of analysis of surface water, ground water and soil samples analyzed in TNPCB laboratory and two private laboratories the following are concluded.
- a. As per the report of private labs
 - i. The parameters mercury and selenium were below the limit of quantification (BLQ) in the 19 number of surface water samples collected.
 - ii. The parameters mercury and selenium were below the limit of quantification (BLQ) in the nine number of ground water samples collected.
 - iii. The parameters mercury and selenium are below the limit of quantification (BLQ) in the six number of soil samples collected.
 - iv. However the heavy metals such as zinc, arsenic, nickel and total chromium are present in four samples out of six numbers of soil samples collected.
 - b. As per the report of TNPCB Lab
 - i. The parameter Mercury is present in the six samples out of 19 numbers of surface water samples collected in the range of 0.01 mg/l to 0.027 mg/l. However the heavy metals are within the limit as per standards IS 2296:1982 standard.


20/5/24
ADDITIONAL CHIEF ENVIRONMENTAL ENGINEER
TAMIL NADU POLLUTION CONTROL BOARD
No.76, MOUNT SALAI, GUINDY,

- ii. The parameter selenium is below the limit of quantification (BLQ) in 19 numbers of surface water samples collected.
- iii. The parameters selenium, zinc and nickel were present in the two samples out of six numbers of soil samples collected.
- iv. The parameters such as heavy metals are within the limit in four samples out of six samples.

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

R. Rajamanickam 20/5/2024
 ADDITIONAL CHIEF ENVIRONMENTAL ENGINEER
 TAMIL NADU POLLUTION CONTROL BOARD
 No.76, MOUNT SALAI, GUINDY,
 CHENNAI-600 032.

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.

R. Rajamanickam 20/5/2024
 ADDITIONAL CHIEF ENVIRONMENTAL ENGINEER
 TAMIL NADU POLLUTION CONTROL BOARD
 No.76, MOUNT SALAI, GUINDY,
 CHENNAI-600 032.

**COMPARISON OF HEAVY METALS IN SURFACE WATER SAMPLES
COLLECTED BY TNPCB WITH NGO'S LAB REPORT**

Name of the location : Neyveli PCS store Discharge					
S.N O	Parameters	Surface water Standard (IS 2296 Class E)	TNPCB Report	M/s. Chennai Mettex Lab Private Limited	M/s.Tamilnadu Test House Private Limited
1.	Zinc as Zn	-	No flow during the collection of sample. Hence sample could not be collected		
2.	Cadmium as Cd	-			
3.	Nickel as Ni	-			
4.	Lead as Pb	-			
5.	Arsenic as As	-			
6.	Total Chromium as Cr	-			
7.	Mercury as Hg	-			
8.	Selenium as Se	-			
9.	Calcium as Ca	-			
10	Magnesium as Mg	-			
11	Manganese as Mn	--			
12	Iron as Fe	-			
Name of the location : Discharge from NNTPS (polluted Surface water)					
S.N O	Parameters	Surface water Standard (IS 2296 Class E)	TNPCB Report	M/s. Chennai Mettex Lab Private Limited	M/s.Tamilnadu Test House Private Limited
1.	Zinc as Zn	-	0.053	BDL	BQL
2.	Cadmium as Cd	-	0.032	BDL	BQL
3.	Nickel as Ni	-	0.105	BDL	BQL
4.	Lead as Pb	-	0.072	BDL	BQL
5.	Arsenic as As	-	0.001	BDL	BQL
6.	Total Chromium as Cr	-	<0.06	BDL	BQL
7.	Mercury as Hg	-	BLQ	BDL	BQL
8.	Selenium as Se	-	BLQ	BDL	BQL
9.	Calcium as Ca	-	132.26	208	117.95
10	Magnesium as Mg	-	26.73	112	55.65
11	Manganese as Mn	--	0.120	0.283	BQL
12	Iron as Fe	-	1.03	0.07	1.41
Name of the location : Discharge from NNTPS					
S.N O	Parameters	Surface water Standard (IS 2296 Class E)	TNPCB Report	M/s. Chennai Mettex Lab Private Limited	M/s.Tamilnadu Test House Private Limited
1.	Zinc as Zn	-	0.053	BDL	BQL
2.	Cadmium as Cd	-	0.032	BDL	BQL
3.	Nickel as Ni	-	0.105	BDL	BQL
4.	Lead as Pb	-	0.072	BDL	BQL
5.	Arsenic as As	-	0.001	BDL	BQL

6.	Total Chromium as Cr	-	<0.06	BDL	BQL
7.	Mercury as Hg	-	BLQ	BDL	BQL
8.	Selenium as Se	-	BLQ	BDL	BQL
9.	Calcium as Ca	-	132.26	208	117.95
10	Magnesium as Mg	-	26.73	112	55.65
11	Manganese as Mn	--	0.120	0.283	BQL
12	Iron as Fe	-	1.03	0.07	1.41
Name of the location : Direct Discharge from Neyveli TPS I					
S.N O	Parameters	Surface water Standard (IS 2296 Class E)	TNPCB Report	M/s. Chennai Mettex Lab Private Limited	M/s.Tamilnadu Test House Private Limited
1.	Zinc as Zn	-	0.094	BDL	BQL
2.	Cadmium as Cd	-	0.030	BDL	BQL
3.	Nickel as Ni	-	0.042	BDL	BQL
4.	Lead as Pb	-	0.05	BDL	BQL
5.	Arsenic as As	-	0.002	BDL	BQL
6.	Total Chromium as Cr	-	<0.06	BDL	BQL
7.	Mercury as Hg	-	BLQ	BDL	BQL
8.	Selenium as Se	-	BLQ	BDL	BQL
9.	Calcium as Ca	-	20.04	25	13.11
10	Magnesium as Mg	-	12.15	11	10.6
11	Manganese as Mn	--	<.01	BDL	BQL
12	Iron as Fe	-	0.279	0.19	0.97
Name of the location : Discharge from Neyveli TPS II					
S.N O	Parameters	Surface water Standard (IS 2296 Class E)	TNPCB Report	M/s. Chennai Mettex Lab Private Limited	M/s.Tamilnadu Test House Private Limited
1.	Zinc as Zn	-	0.411	BDL	BQL
2.	Cadmium as Cd	-	0.036	BDL	BQL
3.	Nickel as Ni	-	0.112	BDL	BQL
4.	Lead as Pb	-	0.139	BDL	BQL
5.	Arsenic as As	-	0.003	BDL	BQL
6.	Total Chromium as Cr	-	<0.06	BDL	BQL
7.	Mercury as Hg	-	0.027	BDL	BQL
8.	Selenium as Se	-	BLQ	BDL	BQL
9.	Calcium as Ca	-	32.06	357	174.75
10	Magnesium as Mg	-	14.88	122	74.19
11	Manganese as Mn	--	0.173	0.122	BQL
12	Iron as Fe	-	6.120	6.14	2.24
Name of the location : Opposite to Main Gate of Mine 2 Kootu Kunideer Thittam near Valiyamadevi					
S.N O	Parameters	Surface water Standard (TNPCB Report	M/s. Chennai Mettex Lab Private Limited	M/s.Tamilnadu Test House Private Limited

		IS 2296 Class E)			
1.	Zinc as Zn	-	0.111	BDL	BQL
2.	Cadmium as Cd	-	0.031	BDL	BQL
3.	Nickel as Ni	-	0.066	BDL	BQL
4.	Lead as Pb	-	0.106	BDL	BQL
5.	Arsenic as As	-	0.0006	BDL	BQL
6.	Total Chromium as Cr	-	<0.06	BDL	BQL
7.	Mercury as Hg	-	0.014	BDL	BQL
8.	Selenium as Se	-	BLQ	BDL	BQL
9.	Calcium as Ca	-	96.20	176	113.5
10	Magnesium as Mg	-	9.72	54	34.45
11	Manganese as Mn	--	0.083	0.060	BQL
12	Iron as Fe	-	0.725	0.53	0.81

Name of the location : Coal Mine discharged from Mine I

S.N O	Parameters	Surface water Standard (IS 2296 Class E)	TNPCB Report	M/s. Chennai Mettex Lab Private Limited	M/s.Tamilnadu Test House Private Limited
1.	Zinc as Zn	-	0.105	BDL	BQL
2.	Cadmium as Cd	-	0.031	BDL	BQL
3.	Nickel as Ni	-	0.038	BDL	BQL
4.	Lead as Pb	-	0.086	BDL	BQL
5.	Arsenic as As	-	0.0003	BDL	BQL
6.	Total Chromium as Cr	-	<0.06	BDL	BQL
7.	Mercury as Hg	-	BLQ	BDL	BQL
8.	Selenium as Se	-	BLQ	BDL	BQL
9.	Calcium as Ca	-	40.08	47	39.32
10	Magnesium as Mg	-	19.44	10.4	13.25
11	Manganese as Mn	--	0.026	BDL	BQL
12	Iron as Fe	-	0.638	0.58	1.9

**Name of the location : Parawnar River carrying NLC Mine 2
Discharge**

S.N O	Parameters	Surface water Standard (IS 2296 Class E)	TNPCB Report	M/s. Chennai Mettex Lab Private Limited	M/s.Tamilnadu Test House Private Limited
1.	Zinc as Zn	-	0.096	BDL	BQL
2.	Cadmium as Cd	-	0.035	BDL	BQL
3.	Nickel as Ni	-	0.091	BDL	BQL
4.	Lead as Pb	-	0.110	BDL	BQL
5.	Arsenic as As	-	0.0009	BDL	BQL
6.	Total Chromium as Cr	-	<0.06	BDL	BQL
7.	Mercury as Hg	-	BLQ	BDL	BQL
8.	Selenium as Se	-	BLQ	BDL	BQL
9.	Calcium as Ca	-	152.30	173	135.43
10	Magnesium as	-	46.17	50	47.7

	Mg				
11	Manganese as Mn	--	0.312	0.129	BQL
12	Iron as Fe	-	2.524	1.02	1.13
Name of the location : Walaja Lake					
S.N O	Parameters	Surface water Standard (IS 2296 Class E)	TNPCB Report	M/s. Chennai Mettex Lab Private Limited	M/s.Tamilnadu Test House Private Limited
1.	Zinc as Zn	-	0.053	BDL	BQL
2.	Cadmium as Cd	-	0.033	BDL	BQL
3.	Nickel as Ni	-	0.061	BDL	BQL
4.	Lead as Pb	-	0.092	BDL	BQL
5.	Arsenic as As	-	0.0009	BDL	BQL
6.	Total Chromium as Cr	-	<0.06	BDL	BQL
7.	Mercury as Hg	-	0.018	BDL	BQL
8.	Selenium as Se	-	BLQ	BDL	BQL
9.	Calcium as Ca	-	104.20	180	91.74
10	Magnesium as Mg	-	43.74	54	45.05
11	Manganese as Mn	--	0.163	0.109	BQL
12	Iron as Fe	-	0.644	0.51	0.65
Name of the location : Pond near Ash Pond water discharge to the pond some times (Aadhandarkollai)					
S.N O	Parameters	Surface water Standard (IS 2296 Class E)	TNPCB Report	M/s. Chennai Mettex Lab Private Limited	M/s.Tamilnadu Test House Private Limited
1.	Zinc as Zn	-	0.122	BDL	BQL
2.	Cadmium as Cd	-	0.036	BDL	BQL
3.	Nickel as Ni	-	0.113	BDL	BQL
4.	Lead as Pb	-	0.101	BDL	BQL
5.	Arsenic as As	-	0.0006	BDL	BQL
6.	Total Chromium as Cr	-	<0.06	BDL	BQL
7.	Mercury as Hg	-	BLQ	BDL	BQL
8.	Selenium as Se	-	BLQ	BDL	BQL
9.	Calcium as Ca	-	152.30	156	166.01
10	Magnesium as Mg	-	17.01	44	13.25
11	Manganese as Mn	--	0.096	0.125	BQL
12	Iron as Fe	-	0.251	0.30	0.45
Name of the location : Kanjamadanpettai Point (control Point)					
S.N O	Parameters	Surface water Standard (IS 2296 Class E)	TNPCB Report	M/s. Chennai Mettex Lab Private Limited	M/s.Tamilnadu Test House Private Limited
1.	Zinc as Zn	-	0.079	BDL	BQL
2.	Cadmium as Cd	-	0.04	BDL	BQL
3.	Nickel as Ni	-	0.048	BDL	BQL
4.	Lead as Pb	-	0.103	BDL	BQL

5.	Arsenic as As	-	0.001	BDL	BQL
6.	Total Chromium as Cr	-	<0.06	BDL	BQL
7.	Mercury as Hg	-	BLQ	BDL	BQL
8.	Selenium as Se	-	BLQ	BDL	BQL
9.	Calcium as Ca	-	12.02	14	4.36
10	Magnesium as Mg	-	2.43	2	5.3
11	Manganese as Mn	--	0.072	BDL	BQL
12	Iron as Fe	-	1.176	0.66	BQL

Name of the location: Iyyan Lake

S.N O	Parameters	Surface water Standard (IS 2296 Class E)	TNPCB Report	M/s. Chennai Mettex Lab Private Limited	M/s.Tamilnadu Test House Private Limited
1.	Zinc as Zn	-	0.135	BDL	BQL
2.	Cadmium as Cd	-	0.040	BDL	BQL
3.	Nickel as Ni	-	0.07	BDL	BQL
4.	Lead as Pb	-	0.095	BDL	BQL
5.	Arsenic as As	-	0.001	BDL	BQL
6.	Total Chromium as Cr	-	<0.06	BDL	BQL
7.	Mercury as Hg	-	0.01	BDL	BQL
8.	Selenium as Se	-	BLQ	BDL	BQL
9.	Calcium as Ca	-	84.16	126	56.79
10	Magnesium as Mg	-	7.29	22	21.2
11	Manganese as Mn	--	0.082	BDL	BQL
12	Iron as Fe	-	1.05	1.04	BQL

Name of the location : Karrikuppam Village Fish Pond

S.N O	Parameters	Surface water Standard (IS 2296 Class E)	TNPCB Report	M/s. Chennai Mettex Lab Private Limited	M/s.Tamilnadu Test House Private Limited
1.	Zinc as Zn	-	0.208	BDL	BQL
2.	Cadmium as Cd	-	0.041	BDL	BQL
3.	Nickel as Ni	-	0.102	BDL	BQL
4.	Lead as Pb	-	0.196	BDL	BQL
5.	Arsenic as As	-	0.006	BDL	BQL
6.	Total Chromium as Cr	-	<0.06	BDL	BQL
7.	Mercury as Hg	-	BLQ	BDL	BQL
8.	Selenium as Se	-	BLQ	BDL	BQL
9.	Calcium as Ca	-	40.08	66	43.69
10	Magnesium as Mg	-	19.44	19	26.5
11	Manganese as Mn	--	0.045	BDL	BQL
12	Iron as Fe	-	0.601	0.45	BQL

Name of the location : Canal near the Thermal power Plant (water discharge from the plant time to time)

S.N O	Parameters	Surface water	TNPCB Report	M/s. Chennai Mettex Lab	M/s.Tamilnadu Test House
----------	------------	---------------	--------------	-------------------------	--------------------------

		Standard (IS 2296 Class E)		Private Limited	Private Limited
1.	Zinc as Zn	-	0.125	BDL	BQL
2.	Cadmium as Cd	-	0.045	BDL	BQL
3.	Nickel as Ni	-	0.087	BDL	BQL
4.	Lead as Pb	-	0.103	BDL	BQL
5.	Arsenic as As	-	0.015	BDL	BQL
6.	Total Chromium as Cr	-	<0.06	BDL	BQL
7.	Mercury as Hg	-	BLQ	BDL	BQL
8.	Selenium as Se	-	BLQ	BDL	BQL
9.	Calcium as Ca	-	44.08	54	43.68
10	Magnesium as Mg	-	17.01	19	3.35
11	Manganese as Mn	--	0.779	BDL	BQL
12	Iron as Fe	-	0.764	0.96	0.86
Name of the location : Mine 1 outlet Vennageni					
S.N	Parameters	Surface water Standard (IS 2296 Class E)	TNPCB Report	M/s. Chennai Mettex Lab Private Limited	M/s.Tamilnadu Test House Private Limited
1.	Zinc as Zn	-	0.196	BDL	BQL
2.	Cadmium as Cd	-	0.045	BDL	BQL
3.	Nickel as Ni	-	0.098	BDL	BQL
4.	Lead as Pb	-	0.114	BDL	BQL
5.	Arsenic as As	-	0.0003	BDL	BQL
6.	Total Chromium as Cr	-	<0.06	BDL	BQL
7.	Mercury as Hg	-	BLQ	BDL	BQL
8.	Selenium as Se	-	BLQ	BDL	BQL
9.	Calcium as Ca	-	60.12	65	48.05
10	Magnesium as Mg	-	9.72	15	29.15
11	Manganese as Mn	--	0.090	0.233	BQL
12	Iron as Fe	-	0.476	0.38	0.21
Name of the location : Ramapuri, Mantharakuppam Vadakkuvellur					
S.N	Parameters	Surface water Standard (IS 2296 Class E)	TNPCB Report	M/s. Chennai Mettex Lab Private Limited	M/s.Tamilnadu Test House Private Limited
1.	Zinc as Zn	-	0.175	BDL	BQL
2.	Cadmium as Cd	-	0.047	BDL	BQL
3.	Nickel as Ni	-	0.104	BDL	BQL
4.	Lead as Pb	-	0.138	BDL	BQL
5.	Arsenic as As	-	0.0003	BDL	BQL
6.	Total Chromium as Cr	-	<0.06	BDL	BQL
7.	Mercury as Hg	-	BLQ	BDL	BQL
8.	Selenium as Se	-	BLQ	BDL	BQL
9.	Calcium as Ca	-	148.29	168	144.17
10	Magnesium as Mg	-	19.44	63	52.99

11	Manganese as Mn	--	0.170	0.060	BQL
12	Iron as Fe	-	1.585	1.13	1.08
Name of the location : Vadakku vellur Ammeri					
S.N O	Parameters	Surface water Standard (IS 2296 Class E)	TNPCB Report	M/s. Chennai Mettex Lab Private Limited	M/s.Tamilnadu Test House Private Limited
1.	Zinc as Zn	-	0.095	BDL	BQL
2.	Cadmium as Cd	-	0.047	BDL	BQL
3.	Nickel as Ni	-	0.102	BDL	BQL
4.	Lead as Pb	-	0.130	BDL	BQL
5.	Arsenic as As	-	0.029	BDL	BQL
6.	Total Chromium as Cr	-	<0.06	BDL	BQL
7.	Mercury as Hg	-	0.019	BDL	BQL
8.	Selenium as Se	-	BLQ	BDL	BQL
9.	Calcium as Ca	-	152.30	204	192.22
10	Magnesium as Mg	-	43.74	56	50.35
11	Manganese as Mn	--	0.044	BDL	BQL
12	Iron as Fe	-	0.240	0.17	1
Name of the location : NNTPS outlet near Thropathi Amman Temple.					
S.N O	Parameters	Surface water Standard (IS 2296 Class E)	TNPCB Report	M/s. Chennai Mettex Lab Private Limited	M/s.Tamilnadu Test House Private Limited
1.	Zinc as Zn	-	0.053	BDL	BQL
2.	Cadmium as Cd	-	0.032	BDL	BQL
3.	Nickel as Ni	-	0.105	BDL	BQL
4.	Lead as Pb	-	0.072	BDL	BQL
5.	Arsenic as As	-	0.001	BDL	BQL
6.	Total Chromium as Cr	-	<0.06	BDL	BQL
7.	Mercury as Hg	-	BLQ	BDL	BQL
8.	Selenium as Se	-	BLQ	BDL	BQL
9.	Calcium as Ca	-	132.26	208	117.95
10	Magnesium as Mg	-	26.73	112	55.65
11	Manganese as Mn	--	0.120	0.283	BQL
12	Iron as Fe	-	1.03	0.07	1.41
Name of the location: Central store					
S.N O	Parameters	Surface water Standard (IS 2296 Class E)	TNPCB Report	M/s. Chennai Mettex Lab Private Limited	M/s.Tamilnadu Test House Private Limited
1.	Zinc as Zn	-	No flow during the collection of sample. . Hence sample could not be collected		
2.	Cadmium as Cd	-			
3.	Nickel as Ni	-			
4.	Lead as Pb	-			
5.	Arsenic as As	-			

6.	Total Chromium as Cr	-			
7.	Mercury as Hg	-			
8.	Selenium as Se	-			
9.	Calcium as Ca	-			
10	Magnesium as Mg	-			
11	Manganese as Mn	--			
12	Iron as Fe	-			
Name of the location: TPS outlet Karuvetti					
S.N O	Parameters	Surface water Standard (IS 2296 Class E)	TNPCB Report	M/s. Chennai Mettex Lab Private Limited	M/s.Tamilnadu Test House Private Limited
1.	Zinc as Zn	-	No flow during the collection of sample. . Hence sample could not be collected		
2.	Cadmium as Cd	-			
3.	Nickel as Ni	-			
4.	Lead as Pb	-			
5.	Arsenic as As	-			
6.	Total Chromium as Cr	-			
7.	Mercury as Hg	-			
8.	Selenium as Se	-			
9.	Calcium as Ca	-			
10	Magnesium as Mg	-			
11	Manganese as Mn	--			
12	Iron as Fe	-			
Name of the location: Muppaneri					
S.N O	Parameters	Surface water Standard (IS 2296 Class E)	TNPCB Report	M/s. Chennai Mettex Lab Private Limited	M/s.Tamilnadu Test House Private Limited
1.	Zinc as Zn	-	0.067	BDL	BQL
2.	Cadmium as Cd	-	0.047	BDL	BQL
3.	Nickel as Ni	-	0.120	BDL	BQL
4.	Lead as Pb	-	0.116	BDL	BQL
5.	Arsenic as As	-	0.001	BDL	BQL
6.	Total Chromium as Cr	-	<0.06	BDL	BQL
7.	Mercury as Hg	-	BLQ	BDL	BQL
8.	Selenium as Se	-	BLQ	BDL	BQL
9.	Calcium as Ca	-	136.27	164	135.43
10	Magnesium as Mg	-	41.31	41	58.3
11	Manganese as Mn	--	0.124	0.046	0.15
12	Iron as Fe	-	1.232	1.16	4.42
Name of the location: TPS 2 outlet					
S.N O	Parameters	Surface water Standard (IS 2296	TNPCB Report	M/s. Chennai Mettex Lab Private Limited	M/s.Tamilnadu Test House Private Limited

		Class E)			
1.	Zinc as Zn	-	0.411	BDL	BQL
2.	Cadmium as Cd	-	0.036	BDL	BQL
3.	Nickel as Ni	-	0.112	BDL	BQL
4.	Lead as Pb	-	0.139	BDL	BQL
5.	Arsenic as As	-	0.003	BDL	BQL
6.	Total Chromium as Cr	-	<0.06	BDL	BQL
7.	Mercury as Hg	-	0.027	BDL	BQL
8.	Selenium as Se	-	BLQ	BDL	BQL
9.	Calcium as Ca	-	32.06	357	174.75
10	Magnesium as Mg	-	14.88	122	74.19
11	Manganese as Mn	--	0.173	0.122	BQL
12	Iron as Fe	-	6.120	6.14	2.24

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

Name of the location : Aadhandarkollai Borewell near Thiravupathi Amman Temple 300m away from ash pond					
S.N O	Parameters	Drinking water Standard (IS 10500 2012)	TNPCB Report	M/s. Chennai Mettex Lab Private Limited	M/s.Tamilnadu Test House Private Limited
1.	pH at 25°C	6.5-8.5	8.09	6.25	6.55
2.	Electrical Conductivity	-	158	185	196.5
3.	Total Dissolved Solids at 180 °C	500	108	128	110
4.	Turbidity	1	<1	<0.05	<1
5.	Total Suspended Solids at 105 °C	--	8	BDL	3
6.	Oil & Grease	--	<2	BDL	BQL
7.	Fluoride as F	1	0.403	0.12	0.568
8.	Chloride as Cl	250	14	23	29.21
9.	Sulphates as SO4	200	27	9	BQL
10	Zinc as Zn	5	0.139	BDL	BQL
11	Cadmium as Cd	0.003	0.035	BDL	BQL
12	Nickel as Ni	0.02	0.050	BDL	BQL
13	Lead as Pb	0.01	0.069	BDL	BQL
14	Arsenic as As	0.01	0.0002	BDL	BQL
15	Chromium as Cr	0.05	<0.06	BDL	BQL
16	Mercury as Hg	0.001	BLQ	BDL	BQL
17	Selenium as Se	0.01	BLQ	BDL	BQL
18	Boron as B	0.5	0.18	0.129	BQL
19	Total Hardness as CaCO3	200	40	78	65.4
20	Calcium as Ca	75	8.817	20	13.11
21	Magnesium as Mg	30	4.37	7	7.94
22	Manganese as Mn	0.1	0.014	BDL	BQL
23	Sulphide as S	0.05	<1	BDL	BQL
24	Aluminium as Al	0.03	0.480	0.008	BQL
25	Total Alkalinity as CaCO3	200	60	53	80.4
26	Iron as Fe	0.3	0.272	0.16	0.35
27	Sodium as Na	-	7.2	10	36.1
28	Potassium as K	-	6.2	3.4	20.1
29	Biochemical Oxygen Demand (BOD) for 3 days at 27°C	-	2.2	BDL	4
30	Chemical Oxygen Demand (COD)	-	24	BDL	16.8
Inference		In			
Name of the location : Vanadhirayapuram Village 100 meters from the Mine					
S.N	Parameters	Drinking	TNPCB	M/s. Chennai	M/s.Tamilnadu

O		water Standard (IS 10500 2012)	Report	Mettex Lab Private Limited	Test House Private Limited
1.	pH at 25°C	6.5-8.5	8.01	6.75	6.67
2.	Electrical Conductivity	-	861	528	575.9
3.	Total Dissolved Solids at 180 °C	500	596	362	323
4.	Turbidity	1	2.48	<0.05	<1
5.	Total Suspended Solids at 105 °C	--	12	BDL	11
6.	Oil & Grease	--	<2	BDL	9
7.	Fluoride as F	1	0.387	0.36	1.462
8.	Chloride as Cl	250	126	68	54.77
9.	Sulphates as SO4	200	69	31	65.57
10	Zinc as Zn	5	0.148	BDL	BQL
11	Cadmium as Cd	0.003	0.040	BDL	BQL
12	Nickel as Ni	0.02	0.087	BDL	BQL
13	Lead as Pb	0.01	0.110	BDL	BQL
14	Arsenic as As	0.01	0.206	BDL	BQL
15	Chromium as Cr	0.05	<0.06	BDL	BQL
16	Mercury as Hg	0.001	BLQ	BDL	BQL
17	Selenium as Se	0.01	BLQ	BDL	BQL
18	Boron as B	0.5	0.12	0.195	BQL
19	Total Hardness as CaCO3	200	200	147	141.7
20	Calcium as Ca	75	64.12	40	30.58
21	Magnesium as Mg	30	9.72	12	15.9
22	Manganese as Mn	0.1	0.038	BDL	BQL
23	Sulphide as S	0.05	<1	BDL	BQL
24	Aluminium as Al	0.03	0.187	0.040	BQL
25	Total Alkalinity as CaCO3	200	140	97	120.6
26	Iron as Fe	0.3	0.329	0.34	1.64
27	Sodium as Na	-	48.7	40	33.1
28	Potassium as K	-	49.3	14	17.1
29	Biochemical Oxygen Demand(BOD) for 3 days at 27°C	-	2.6	3	1
30	Chemical Oxygen Demand (COD)	-	40	8	8.4

Name of the location : Ayikuppam – Kullanchavadi Bore well (Control Point)

S.N O	Parameters	Drinking water Standard (IS 10500 2012)	TNPCB Report	M/s. Chennai Mettex Lab Private Limited	M/s.Tamilnadu Test House Private Limited
1.	pH at 25°C	6.5-8.5	7.54	7.02	6.88
2.	Electrical Conductivity	-	482	537	773.1
3.	Total Dissolved Solids at 180 °C	500	312	411	433
4.	Turbidity	1	2.83	<0.05	<1
5.	Total Suspended Solids	--	12	BDL	4

	at 105 °C				
6.	Oil & Grease	--	<2	BDL	25.2
7.	Fluoride as F	1	0.499	0.28	8.444
8.	Chloride as Cl	250	70	69	65.72
9.	Sulphates as SO4	200	29	27	29.77
10	Zinc as Zn	5	0.150	BDL	BQL
11	Cadmium as Cd	0.003	0.040	BDL	BQL
12	Nickel as Ni	0.02	0.068	BDL	BQL
13	Lead as Pb	0.01	0.114	BDL	BQL
14	Arsenic as As	0.01	0.00002	BDL	BQL
15	Chromium as Cr	0.05	<0.06	BDL	BQL
16	Mercury as Hg	0.001	BLQ	BDL	BQL
17	Selenium as Se	0.01	BLQ	BDL	BQL
18	Boron as B	0.5	0.13	0.180	BQL
19	Total Hardness as CaCO3	200	140	161	141.7
20	Calcium as Ca	75	48.09	45	30.58
21	Magnesium as Mg	30	4.86	12	15.89
22	Manganese as Mn	0.1	0.018	BDL	BQL
23	Sulphide as S	0.05	<1	BDL	BQL
24	Aluminium as Al	0.03	BDL	BDL	BQL
25	Total Alkalinity as CaCO3	200	80	78	110.55
26	Iron as Fe	0.3	0.264	0.12	BQL
27	Sodium as Na	-	10.9	33	31.6
28	Potassium as K	-	6.3	2.41	7.8
29	Biochemical Oxygen Demand(BOD) for 3 days at 27°C	-	3	3	9
30	Chemical Oxygen Demand (COD)	-	40	9	25.2

Name of the location: NLC Pipe Water (Drinking Water Supplied by NLC Management)

S.N O	Parameters	Drinking water Standard (IS 10500 2012)	TNPCB Report	M/s. Chennai Mettex Lab Private Limited	M/s.Tamilnadu Test House Private Limited
1.	pH at 25°C	6.5-8.5	7.52	6.62	6.87
2.	Electrical Conductivity	-	271	290	382.9
3.	Total Dissolved Solids at 180 °C	500	182	152	214.4
4.	Turbidity	1	<1	<0.05	<1
5.	Total Suspended Solids at 105 °C	--	12	BDL	12
6.	Oil & Grease	--	<2	BDL	BQL
7.	Fluoride as F	1	0.656	BDL	7.579
8.	Chloride as Cl	250	24	24	25.56
9.	Sulphates as SO4	200	35	10	56.59
10	Zinc as Zn	5	0.059	BDL	BQL
11	Cadmium as Cd	0.003	0.038	BDL	BQL
12	Nickel as Ni	0.02	0.055	BDL	BQL
13	Lead as Pb	0.01	0.081	BDL	BQL

14	Arsenic as As	0.01	0.0001	BDL	BQL
15	Chromium as Cr	0.05	<0.06	BDL	BQL
16	Mercury as Hg	0.001	BLQ	BDL	BQL
17	Selenium as Se	0.01	BLQ	BDL	BQL
18	Boron as B	0.5	0.37	0.099	BQL
19	Total Hardness as CaCO ₃	200	90	102	109
20	Calcium as Ca	75	28.05	26	30.58
21	Magnesium as Mg	30	4.86	9	7.95
22	Manganese as Mn	0.1	0.012	BDL	BQL
23	Sulphide as S	0.05	<1	BDL	BQL
24	Aluminium as Al	0.03	0.164	BDL	BQL
25	Total Alkalinity as CaCO ₃	200	50	46	70.35
26	Iron as Fe	0.3	0.292	0.73	BQL
27	Sodium as Na	-	8	17	38.20
28	Potassium as K	-	6.4	3	10.40
29	Biochemical Oxygen Demand(BOD) for 3 days at 27°C	-	2	4	55
30	Chemical Oxygen Demand (COD)	-	24	12	226.8

Name of the location: Vellankulam

S.N	Parameters	Drinking water Standard (IS 10500 2012)	TNPCB Report	M/s. Chennai Mettlex Lab Private Limited	M/s. Tamilnadu Test House Private Limited
1.	pH at 25°C	6.5-8.5	6.58	6.21	6.57
2.	Electrical Conductivity	-	126	142	193.6
3.	Total Dissolved Solids at 180 °C	500	86	102	108.4
4.	Turbidity	1	<1	<0.05	<1
5.	Total Suspended Solids at 105 °C	--	8	BDL	8
6.	Oil & Grease	--	<2	BDL	4
7.	Fluoride as F	1	0.421	BDL	8.067
8.	Chloride as Cl	250	13	17	14.61
9.	Sulphates as SO ₄	200	30	7	11.39
10	Zinc as Zn	5	0.128	BDL	BQL
11	Cadmium as Cd	0.003	0.044	BDL	BQL
12	Nickel as Ni	0.02	0.055	BDL	BQL
13	Lead as Pb	0.01	0.082	BDL	BQL
14	Arsenic as As	0.01	0.0001	BDL	BQL
15	Chromium as Cr	0.05	<0.06	BDL	BQL
16	Mercury as Hg	0.001	0.005	BDL	BQL
17	Selenium as Se	0.01	BLQ	BDL	BQL
18	Boron as B	0.5	5	0.077	BQL
19	Total Hardness as CaCO ₃	200	40	57	87.2
20	Calcium as Ca	75	12.02	17	8.75
21	Magnesium as Mg	30	2.43	3.6	15.9
22	Manganese as Mn	0.1	0.016	BDL	BQL

23	Sulphide as S	0.05	<1	BDL	BQL
24	Aluminium as Al	0.03	0.211	BDL	BQL
25	Total Alkalinity as CaCO ₃	200	30	2.7	40.2
26	Iron as Fe	0.3	0.240	0.22	BQL
27	Sodium as Na	-	7.1	11	28.1
28	Potassium as K	-	5.9	2	9.8
29	Biochemical Oxygen Demand (BOD) for 3 days at 27°C	-	<2	3	80
30	Chemical Oxygen Demand (COD)	-	8	9.5	226.8
Name of the location : Pudukkuppam village					
S.No	Parameters	Drinking water Standard (IS 10500 2012)	TNPCB Report	M/s. Chennai Mettex Lab Private Limited	M/s.Tamilnadu Test House Private Limited
1.	pH at 25°C	6.5-8.5	8.04	7.47	7.57
2.	Electrical Conductivity	-	840	1190	1041
3.	Total Dissolved Solids at 180 °C	500	580	713	582.9
4.	Turbidity	1	1.92	<0.05	<1
5.	Total Suspended Solids at 105 °C	--	12	BDL	10
6.	Oil & Grease	--	<2	BDL	149
7.	Fluoride as F	1	0.399	0.32	9.235
8.	Chloride as Cl	250	128	146	29.21
9.	Sulphates as SO ₄	200	59	56	68.3
10	Zinc as Zn	5	0.141	BDL	BQL
11	Cadmium as Cd	0.003	0.041	BDL	BQL
12	Nickel as Ni	0.02	0.055	BDL	BQL
13	Lead as Pb	0.01	0.090	BDL	BQL
14	Arsenic as As	0.01	0.002	BDL	BQL
15	Chromium as Cr	0.05	<0.06	BDL	BQL
16	Mercury as Hg	0.001	0.007	BDL	BQL
17	Selenium as Se	0.01	BLQ	BDL	BQL
18	Boron as B	0.5	0.29	0.176	BQL
19	Total Hardness as CaCO ₃	200	230	270	272.5
20	Calcium as Ca	75	6.012	78	39.32
21	Magnesium as Mg	30	19.44	18	42.4
22	Manganese as Mn	0.1	0.237	0.192	BQL
23	Sulphide as S	0.05	<1	BDL	BQL
24	Aluminium as Al	0.03	0.149	BDL	BQL
25	Total Alkalinity as CaCO ₃	200	180	201	201
26	Iron as Fe	0.3	0.169	0.11	BQL
27	Sodium as Na	-	21	102	39.8
28	Potassium as K	-	9.5	13	4.8
29	Biochemical Oxygen Demand (BOD) for 3 days at 27°C	-	3.8	7	92
30	Chemical Oxygen	-	48	35	272.2

Demand (COD)					
Name of the location : Pudukuppam village Pipe Water					
S.No	Parameters	Drinking water Standard (IS 10500 2012)	TNPCB Report	M/s. Chennai Mettlex Lab Private Limited	M/s.Tamilnadu Test House Private Limited
1.	pH at 25°C	6.5-8.5	7.56	7.92	8.08
2.	Electrical Conductivity	-	797	1032	924.4
3.	Total Dissolved Solids at 180 °C	500	552	724	517.6
4.	Turbidity	1	1.49	<0.05	<10
5.	Total Suspended Solids at 105 °C	--	14	BDL	56
6.	Oil & Grease	--	<2	BDL	103
7.	Fluoride as F	1	0.072	0.37	11.56
8.	Chloride as Cl	250	104	112	87.63
9.	Sulphates as SO4	200	61	37	78.12
10.	Zinc as Zn	5	0.176	BDL	BQL
11.	Cadmium as Cd	0.003	0.042	BDL	BQL
12.	Nickel as Ni	0.02	0.082	BDL	BQL
13.	Lead as Pb	0.01	0.143	BDL	BQL
14.	Arsenic as As	0.01	0.003	BDL	BQL
15.	Chromium as Cr	0.05	<0.06	BDL	BQL
16.	Mercury as Hg	0.001	BLQ	BDL	BQL
17.	Selenium as Se	0.01	BLQ	BDL	BQL
18.	Boron as B	0.5	0.23	0.082	BQL
19.	Total Hardness as CaCO3	200	300	290	359.7
20.	Calcium as Ca	75	84.16	82	87.37
21.	Magnesium as Mg	30	21.87	21	34.45
22.	Manganese as Mn	0.1	0.029	BDL	BQL
23.	Sulphide as S	0.05	<1	BDL	BQL
24.	Aluminium as Al	0.03	0.065	BDL	BQL
25.	Total Alkalinity as CaCO3	200	200	196	190.95
26.	Iron as Fe	0.3	0.236	0.22	BQL
27.	Sodium as Na	-	16.5	47	25.2
28.	Potassium as K	-	9.1	8	8.1
29.	Biochemical Oxygen Demand (BOD) for 3 days at 27°C	-	3	4	19
30.	Chemical Oxygen Demand (COD)	-	40	17	42
Name of the location : Karrikuppam Village					
S.No	Parameters	Drinking water Standard (IS 10500 2012)	TNPCB Report	M/s. Chennai Mettlex Lab Private Limited	M/s.Tamilnadu Test House Private Limited
1.	pH at 25°C	6.5-8.5	8.09	7.89	8.18
2.	Electrical Conductivity	-	451	592	528.7
3.	Total Dissolved Solids at 180 °C	500	342	406	296.07
4.	Turbidity	1	1.26	<0.05	<1

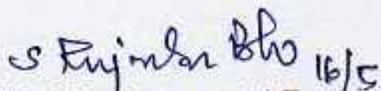
5.	Total Suspended Solids at 105 °C	--	12	BDL	8
6.	Oil & Grease	--	<2	BDL	BQL
7.	Fluoride as F	1	0.318	0.21	7.59
8.	Chloride as Cl	250	64	70	62.07
9.	Sulphates as SO4	200	123	22	50.91
10.	Zinc as Zn	5	0.113	BDL	BQL
11.	Cadmium as Cd	0.003	0.044	BDL	BQL
12.	Nickel as Ni	0.02	0.063	BDL	BQL
13.	Lead as Pb	0.01	0.094	BDL	BQL
14.	Arsenic as As	0.01	0.002	BDL	BQL
15.	Chromium as Cr	0.05	<0.06	BDL	BQL
16.	Mercury as Hg	0.001	<u>BQL</u>	<u>BDL</u>	<u>BQL</u>
17.	Selenium as Se	0.01	<u>BQL</u>	<u>BDL</u>	<u>BQL</u>
18.	Boron as B	0.5	<u>0.52</u>	BDL	BQL
19.	Total Hardness as CaCO3	200	190	196	239.8
20.	Calcium as Ca	75	52.10	41	48.06
21.	Magnesium as Mg	30	14.58	23	29.15
22.	Manganese as Mn	0.1	0.138	0.098	BQL
23.	Sulphide as S	0.05	<1	BDL	BQL
24.	Aluminium as Al	0.03	0.238	BDL	BQL
25.	Total Alkalinity as CaCO3	200	100	105	150.75
26.	Iron as Fe	0.3	0.102	0.30	1.1
27.	Sodium as Na	-	10	16	37.80
28.	Potassium as K	-	4.9	2	13.60
29.	Biochemical Oxygen Demand (BOD) for 3 days at 27°C	-	2.3	3	8
30.	Chemical Oxygen Demand (COD)	-	24	7	25.2
Name of the location: Tholkappiar Nagar					
S.No	Parameters	Drinking water Standard (IS 10500 2012)	TNPCB Report	M/s. Chennai Mettex Lab Private Limited	M/s. Tamilnadu Test House Private Limited
1.	pH at 25°C	6.5-8.5	6.5	6.46	7.26
2.	Electrical Conductivity	-	330	412	387.6
3.	Total Dissolved Solids at 180 °C	500	226	272	217.05
4.	Turbidity	1	4.45	0.8	<1
5.	Total Suspended Solids at 105 °C	--	16	4	BQL
6.	Oil & Grease	--	<2	BDL	2
7.	Fluoride as F	1	0.594	0.13	8.02
8.	Chloride as Cl	250	23	35	36.51
9.	Sulphates as SO4	200	28	15	75.28
10.	Zinc as Zn	5	0.082	BDL	BQL
11.	Cadmium as Cd	0.003	0.053	BDL	BQL
12.	Nickel as Ni	0.02	0.05	BDL	BQL
13.	Lead as Pb	0.01	0.116	BDL	BQL

14	Arsenic as As	0.01	0.0004	BDL	BQL
15	Chromium as Cr	0.05	<0.06	BDL	BQL
16	Mercury as Hg	0.001	BLQ	BDL	BQL
17	Selenium as Se	0.01	BLQ	BDL	BQL
18	Boron as B	0.5	0.11	0.118	BQL
19	Total Hardness as CaCO ₃	200	130	132	152.6
20	Calcium as Ca	75	36.07	33	39.32
21	Magnesium as Mg	30	9.72	12	13.25
22	Manganese as Mn	0.1	0.029	BDL	BQL
23	Sulphide as S	0.05	<1	BDL	BQL
24	Aluminium as Al	0.03	0.139	0.021	BQL
25	Total Alkalinity as CaCO ₃	200	80	66	70.35
26	Iron as Fe	0.3	0.293	0.52	0.4
27	Sodium as Na	-	10.2	22	28.10
28	Potassium as K	-	8.4	2.2	7.3
29	Biochemical Oxygen Demand (BOD) for 3 days at 27°C	-	2.5	2.8	61
30	Chemical Oxygen Demand (COD)	-	24	6	109.2

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

Name of the Location : Karumbu Thottam Vadakuvellur					
Sl.No	Parameters	Soil standards mg/kg	TNPCB committee Results	M/s. Chennai Mettex Lab Private Limited	M/s.Tamilnadu Test House Private Limited
1	Zinc as Zn	250	133.79	190	29.4
2	Nickel as Ni	45	20.65	BDL	BQL
3	Cadmium as Cd	1.4	<0.02	BDL	BQL
4	Lead as Pb	70	4.76	BDL	BQL
5	Arsenic as As	12	0.004	BDL	16.7
6	Total Chromium as Cr	64	<0.06	38.9	55.5
7	Mercury as Hg	6.6	BLQ	BDL	BQL
8	Selenium as Se	1.0	2.31	BDL	BQL
Name of the Location: Vadakku Vellore By pass					
Sl.No.	Parameters	Soil standards mg/kg	TNPCB Results	M/s. Chennai Mettex Lab Private Limited	M/s.Tamilnadu Test House Private Limited
1.	Zinc as Zn	250	459	600	20.19
2.	Nickel as Ni	45	51.54	BDL	BQL
3.	Cadmium as Cd	1.4	<0.02	BDL	BQL
4.	Lead as Pb	70	1.12	BDL	BQL
5.	Arsenic as As	12	0.002	BDL	21.18
6.	Total Chromium as Cr	64	<0.06	47.5	34.09
7.	Mercury as Hg	6.6	0.59	BDL	BQL
8.	Selenium as Se	1.0	6.77	BDL	BQL
Name of the Location: Agriculture Land near Iyyan Lake					
Sl.No.	Parameters	Soil standards mg/kg	TNPCB Results	M/s. Chennai Mettex Lab Private Limited	M/s.Tamilnadu Test House Private Limited
1.	Zinc as Zn	250	22.10	57.9	31.06
2.	Nickel as Ni	45	5.34	BDL	BQL
3.	Cadmium as Cd	1.4	<0.02	BDL	BQL
4.	Lead as Pb	70	3.20	BDL	BQL
5.	Arsenic as As	12	0.003	BDL	15.4
6.	Total Chromium as Cr	64	<0.06	56.5	28.19
7.	Mercury as Hg	6.6	BLQ	BDL	BQL
8.	Selenium as Se	1.0	BLQ	BDL	BQL
Name of the Location: Paddy Filed within one Kilometer from the stack of NNTPS					
Sl.No.	Parameters	Soil standards mg/kg	TNPCB Results	M/s. Chennai Mettex	M/s.Tamilnadu Test House Private Limited

1.	Zinc as Zn	250	20	32.6	22.4
2.	Nickel as Ni	45	5.89	BDL	BQL
3.	Cadmium as Cd	1.4	<0.02	BDL	BQL
4.	Lead as Pb	70	8.08	BDL	BQL
5.	Arsenic as As	12	0.001	BDL	BQL
6.	Total Chromium as Cr	64	<0.06	44.5	67.7
7.	Mercury as Hg	6.6	0.62	BDL	BQL
8.	Selenium as Se	1.0	BLQ	BDL	BQL
Name of the Location: Karikuppam Village agricultural land near Thermal Power Plant					
Sl.No.	Parameters	Soil standards mg/kg	TNPCB Results	M/s. Chennai Mettex Lab Private Limited	M/s. Tamilnadu Test House Private Limited
1.	Zinc as Zn	250	7.63	24.1	18.09
2.	Nickel as Ni	45	2.02	BDL	BQL
3.	Cadmium as Cd	1.4	<0.02	BDL	BQL
4.	Lead as Pb	70	1.52	BDL	BQL
5.	Arsenic as As	12	0.004	BDL	BQL
6.	Total Chromium as Cr	64	<0.06	26.2	30.09
7.	Mercury as Hg	6.6	BLQ	BDL	BQL
8.	Selenium as Se	1.0	BLQ	BDL	BQL
Name of the Location: Pallitheru Vadakku Vellore					
Sl.No.	Parameters	Soil standards mg/kg	TNPCB Results	M/s. Chennai Mettex Lab Private Limited	M/s. Tamilnadu Test House Private Limited
1.	Zinc as Zn	250	22.05	53.2	33.89
2.	Nickel as Ni	45	17.16	BDL	BQL
3.	Cadmium as Cd	1.4	<0.02	BDL	BQL
4.	Lead as Pb	70	1.14	BDL	BQL
5.	Arsenic as As	12	0.004	BDL	10.98
6.	Total Chromium as Cr	64	<0.06	56.2	42.9
7.	Mercury as Hg	6.6	BLQ	BDL	BQL
8.	Selenium as Se	1.0	BLQ	BDL	BQL


 Joint Chief Environmental Engineer (M)
 Tamil Nadu Pollution Control Board
 Cuddalore


 16/5/24

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

Original Application No.107 of 2023 (SZ)

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".

Vs.

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

...Respondents

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

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

Date:20.05.2024.

Date of hearing on:22.05.2025.