BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL

SOUTHERN ZONE, CHENNAI

Original Application No.107 of 2023 (SZ)

I.A. No. 151 of 2024 (SZ)
WITH
Original Application No. 24 of 2024 (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

With

News Item in South First Dt. 19.09.2023 titled "Wages of mining Neyveli turns ashtray, leaving farmers with broken promises and uncertain future"

Vs

CPCB & ors

...Respondents

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

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Original Application No. 107 of 2023 (SZ) &

I.A. No. 151 of 2024 (SZ)

WITH

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IN THE MATTER OF

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

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WITH

Tribunal on its own motion SUO MOTU based on the News Item in South First Dt. 19.09.2023 titled "Wages of mining Neyveli turns ashtray, leaving farmers with broken promises and uncertain future".

And

Central Pollution Control Board, Through its Member Secretary, New Delhi and Ors.

...Respondents

ADDITIONAL REPORT FILED ON BEHALF OF THE TAMIL NADU POLLUTION CONTROL BOARD

I, M.Vijayalakshmi, D/o. Muthiah, aged about 59 years, having office at No., 76, Mount Salai, Guindy, Chennai – 32, do hereby solemnly affirm and sincerely state as follows:-

M. Mayobhmi
17/2/227

ADDITIONAL CHIEF ENVIRONMENTAL ENGINEER
TAMIL NADU POLLUTION CONTROL BOARD
No.76, MOUNT SALAI, GUINDY,
CHENNAI-600 032.

- 1. I submit that I am working as the Additional Chief Environmental Engineer, Tamil Nadu Pollution Control Board, Chennai 600032 and I am authorized to file this Additional report on behalf of the Tamil Nadu Pollution Control Board and as such I am well acquainted with the facts of the case from the available office records.
- 2. It is respectfully submitted that based on the news published in the Dinamalar dated 31.5.2024, surface water samples were taken from the Veeram lake on 31.5.2024 at the following places:
 - i. Entrance point of Vadavaru River at Nadukanjankollai, Kattumannar Koil Taluk Cuddalaore District
 - ii. Vadavaru River at Poovizhunthanallur, Nadukanjankollai ,Kattumannar Koil Taluk Cuddalaore District
 - iii. Entry Point (Mouth) of Veeranam Lake near PWD office at Lalpettai Nadukanjankollai, Kattumannar Koil Taluk Cuddalaore District.
 - iv. End point of Veeranam Lake near Metro Water Pumping Station Boothanam Village.
 - v. Veeranam Lake View Pint at Kandakumaran Village.
 - vi. End point of Veeranam Lake near Metro Water Pumping Station Boothanam Village.
- 3. It is respectfully submitted that the Report of analysis (ROA) of the surface water sample taken on 31.05.2024 shows that, all parameters are within the limit as per standards IS: 2296:1982 (Class E: Water for Irrigation) (ROA are enclosed as Annexure I).
- 4. It is respectfully submitted that as per the direction passed by the Hon'ble Tribunal, (SZ) on 01.07.2024, inspection was conducted on 24.7.2024 by the O/o. DEE, Cuddalore and during the time of inspection it was observed that there is no flow of water from River Kollidam to Veeranam Lake. Hence the surface water samples were taken from the Veeranam lake on 24.7.2024 at the following places:

ADDITIONAL CHIEF ENVIRONMENTAL ENGINEER
TAMIL NADU POLLUTION CONTROL BOARD
No.76, MOUNT SALAI, GUINDY,
CHENNAI-600 032.

- i. Near Nathamalai Bus stop
- ii. Near Kanthakumaran Bus stop
- iii. Near Thenpathi Bus stop
- iv. Near Paripoorananatham Sluice at Veyyalur
- 5. It is respectfully submitted that the report of analysis for the samples taken on 24.7.2024 shows that, all parameters are within the limit except BOD (Biological Oxygen Demand) as per standards IS: 2296:1982 (Class E: Water for Irrigation) (ROA is enclosed as Annexure II).
- 6. It is respectfully submitted that as per the Order passed by the Hon'ble Tribunal, (SZ) dated 23.9.2024, the followings are the source of water and its distance are submitted herein.
 - i. The Source of water for Veeranam lake is from the River Kollidam.
 - ii. The source of Water for Walaja Lake is from overflow of the Veeranam lake, Mine water from NLC.
 - iii. The distance between the Veeranam Lake and Walaja Lake is around 15 Km.
- 7. It is respectfully submitted that the Vellankulam (Ground Water) station is located from the Mine I, Mine I A and Mine II are located at distance of 2.35, 7.13 and 8.45 Km respectively in the downstream of mining operation (Map is enclosed as Annexure III).
- 8. It is respectfully submitted that, the samples of water, soil and ash samples were collected on 17.12.2024 in and around the NLC and handed over to the Advanced Environmental Laboratory, Chennai and IIT Cube, Taramani Chennai.

	Surface water	Ground Water	Soil samples	Fly ash	Total
Total samples	17	9	5	1	22



9. It is respectfully submitted that the Observation of samples collected on 17.12.2024 are as follows:

I. The Reports of M/s. IIT Cube, Taramani Chennai

- a. The parameters Mercury and selenium were below the limit of quantification (BLQ) in the 17 number of surface water samples collected.
- b. The parameters Mercury and selenium were below the limit of quantification (BLQ) in the 09 number of ground water samples collected.
- c. The parameters Mercury, Selenium and Arsenic were below the limit of quantification (BLQ) in the 05 number of soil samples collected.
- d. The parameters Mercury, Selenium and Arsenic were below the limit of quantification (BLQ) in the one number of ash samples collected.
- e. The parameters Zinc, Nickel and Total Chromium were within in the limit in the 05 number of soil samples collected.
- f. The parameters Zinc, Nickel and Total Chromium were within in the limit in one number of ash samples collected.

II. The Reports of The TNPCB Lab

- a. The parameter Mercury is present in the 15 places out of 17 numbers of surface water collected in the range of 0.0012 mg/l to 0.115 mg/l. As per Surface Water Standard (IS 2296 Class E) there is no limit for mercury. In 2 locations the mercury is below the limit of quantification. However, the selenium is not analysed for water samples and soil samples by the TNPCB.
- b. The parameter Mercury is below the limit of quantification (BLQ) in the 02 number of ground water samples collected and in the one ground water sample, the mercury is within the limit.
- c. The parameter Mercury is present in the range 0.0025 mg/l to 0.0626 mg/l (against the value of 0.001 mg/l) in the 06



number of ground water samples collected.

- d. The parameters Zinc, Mercury and Nickel were within the limit for 5 numbers of soil samples collected.
- e. The parameters Zinc, Mercury and Nickel were within the limit in one number of ash samples collected.
- f. The parameter Total Chromium is below the limit of quantification (BLQ) for 5 number of soil samples collected.
- g. The parameter Total Chromium is below the limit of quantification (BLQ) in one number of ash samples collected.

10. It is humbly submitted that the Comparison of samples collected on 17.12.2024 is enclosed as Annexure – IV.

11. It is humbly submitted that as per the direction issued by the Hon'ble NGT (SZ) Chennai in its order dated 10.08.2023 Tamil Nadu Pollution Control Board (TNPCB) to inspect the area, study the water quality of the water bodies near NLC and also to ascertain whether the news is correct or not . Based on that, the Board has formed a committee on 10.08.2023 to inspect the area and collect Water and soil samples in the area referred in the study report. Based on that, the TNPCB committee inspected study area on 11.08.2023, 16.08.2023, 17.08.2023, 23.08.2023 29.08.2023 and 28.09.2023. In addition to the above, TNPCB has also appointed Thiru. N.K Kuttiappan, Ex. Deputy Director, National Productivity Council as an external committee member and study area was again inspected on 31.10.2023, 01.11.2023 and 02.11.2023.Overall recommendation has been already submitted before the Hon'ble NGT(SZ) Chennai in the report filed on 29.11.2023

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

ADDITIONAL CHIEF ENVIRONMENTAL ENGINEER
TAMIL NADU POLLUTION CONTROL BOARD
No.76, MOUNT SALAI, GUINDY,
CHENNAI-600 032.

VERIFICATION

I, M.Vijayalakshmi, D/o. Muthiah, working as Additional Chief Environmental Engineer, Tamil Nadu Pollution Control Board, Chennai, do hereby verify that the contents of above report are true to the best of my knowledge through records.

m. Vyangalahmi, -12/2017
ADDITIONAL CHIEF ENVIRONMENTAL ENGINEER

ADDITIONAL CHIEF ENVIRONMENTAL ENGINEER TAMIL NADU POLLUTION CONTROL BOARD No.76, MOUNT SALAI, GUINDY, CHENNAI-600 032.



TAMIL NADU POLLUTION CONTROL BOARD ADVANCED ENVIRONEMENTAL LABORATORY, CUDDALORE REPORT OF ANALYSIS

ROA NO: 05/411, 05/412 & 05/413 Dt: 28/06/2024

Name &		District Environmental Eng	gineer,	Date of	31.05.2024
Address of the sender		Tamilnadu Pollution Contro	Analysis	•	
Nature & Number of samples.	:	03 Number of Trade Effluent samples	Sample Quantity	Sealed and 2.5 L polythe container	ene
Date & Time of sample collection		31.05.2024 at 10.50, 11.25 & 12.05 Hrs	Date & Time of sample receipt at the lab	31.05.2024	at 17:30 Hrs
	1. 2.	Entrance point of Vadavar Katumannarkoil Taluk, Cuc Vadavaru river at Poovizhu		3900	
Point of Collection	3.	Nadukanjankollai, Katumar District. Mouth of Veeranam Lake r	Page No 1 of 1		
		Lalpettai, Nadukanjankolla Cuddalore District.	i, Katumannarkoil Taluk,		

						O INC. ASS.
,	DEE Code No.		1	2	3	1 - Total Control of the Control of
SI.	Lab Code No.	Unit	411	412	413	Test Method
No.	Parameters		411	412	713	
1.	pH @ 25°C	-,	6.61	6.79	6.71	APHA 23rd Edn 2017, 4500 H+ B
2.	Total Suspended solids @ 105°C	mg/L	10	12	10	APHA 23rd Edn 2017, 2540 D
3.	Total Dissolved Solids @ 180°C	mg/L	540	530	535	APHA 23rd Edn 2017, 2540-C
4.	Chloride as Cl	mg/L	160	170	165	APHA 23rd Edn 2017, 4500-CI B
5.	Sulphate as SO₄	mg/L	60	64	60	APHA 23rd Edn 2017 4500-SO ₄ ² - E
6.	BOD (3 days @ 27°C)	mg/L	10	12	. 10	IS 3025 (Part – 44) :1993, Reaff: 2009
7.	COD	mg/L	72	72	80	IS 3025 (Part – 58), Reaff 2006
8.	Total Kjeldahl Nitrogen	mg/L	8.9	7.28	8.4	APHA 23rd Edn 2017-4500-N-B
9.	Sulphide	mg/L	<2 .	<2	<2	APHA 23rd Edn 2017-4500-NH ₃ C
10.	Potassium	mg/L	7.9	8.6	7.7	APHA 23rd Edn 2017-3500-K B
11.	Percent Sodium	%	21	21	20	In House Method : AEL- CUD/SOP/27 Issue No.01/Date. 18.10.2013
12.	Phosphates	mg/L	1.10	1.09	1.35	APHA 23rd Edn 2017-4500-P-E
13.	Ammonical Nitrogen	mg/L	5.6	4.48	5.6	APHA 23rd Edn 2017, 4500-NH3
14.	Dissolved Oxygen	mg/L	5.2	5.1	5.2	APHA 23rd Edn 2017, 2540-DO

Note: <MDL indicates Less than minimum detectable limit.

Statement to the effect that the results relate only to the items tested.

ES

Chief Scientific Officer, TNPCB/AEL/CUDDALORE



TAMIL NADU POLLUTION CONTROL BOARD ADVANCED ENVIRONEMENTAL LABORATORY, CUDDALORE REPORT OF ANALYSIS

ROA NO: 05/414 & 05/415 Dt: 28/06/2024

Name & Address of the sender		District Environmental En Tamilnadu Pollution Contr	Date of Analysis	31.05.2024	
Nature & Number of samples.	:	02 Number of Trade Effluent samples	Sample Quantity	Sealed and I 2.5 L polythe container	ene
Date & Time of sample collection		31.05.2024 at 12.20 & 12.30Hrs	Date & Time of sample receipt at the lab	31.05.2024 a	at 17:30 Hrs
Point of Collection	1.	Veeranam Lake View Poir Village. End point of Veeranam La pumping station at Bootha	Page N	o 1 of 1	

	DEE Code No.		4	5	
SI.	Lab Code No.	Unit			Test Method
No.	Parameters	0	414	415	
1.	pH @ 25°C	_	6.17	6.27	APHA 23rd Edn 2017, 4500 H+ B
2.	Total Suspended solids @ 105°C	mg/L	10	10	APHA 23rd Edn 2017, 2540 D
3.	Total Dissolved Solids @ 180°C	mg/L	550	530	APHA 23rd Edn 2017, 2540-C
4.	Chloride as Cl	mg/L	176	140	APHA 23rd Edn 2017, 4500-CI B
5.	Sulphate as SO ₄	mg/L	60	52	APHA 23rd Edn 2017 4500-SO ₄ ²⁻ - E
6.	BOD (3 days @ 27°C)	mg/L	12	10	IS 3025 (Part – 44) :1993, Reaff: 2009
7.	COD	mg/L	72	64	IS 3025 (Part – 58), Reaff 2006
8.	Total Kjeldahl Nitrogen	mg/L	7.84	6.72	APHA 23rd Edn 2017-4500-N-B
9.	Sulphide	mg/L	<1	<1	APHA 23rd Edn 2017-4500-NH ₃ C
10.	Potassium	mg/L	7.7	10.1	APHA 23rd Edn 2017-3500-K B
11.	Percent Sodium	%	21	22	In House Method : AEL-CUD/SOP/27 Issue No.01/Date. 18.10.2013
12.	Phosphates	mg/L	0.931	1.18	APHA 23rd Edn 2017-4500-P-E
13.	Ammonical Nitrogen	mg/L	4.48	4.48	APHA 23rd Edn 2017, 4500-NH3
14:	Dissolved Oxygen	mg/L	5.2	5.2	APHA 23rd Edn 2017, 2540-DO

Note: <MDL indicates Less than minimum detectable limit.

Statement to the effect that the results relate only to the items tested.

gw ES

Chief Scientific Officer, TNPCB/AEL/CUDDALORE



TAMIL NADU POLLUTION CONTROL BOARD ADVANCED ENVIRONEMENTAL LABORATORY, CUDDALORE REPORT OF ANALYSIS

ROA NO: 07/763, 07/764, Dt: 23/08/2024

Name & Address of the sender		District Environmental E Tamilnadu Pollution Con	Date of Analysis	25.07.2024	
Nature & Number of samples.	:	02 Number of		Sealed and Fastened in 2.5 L polythene container	
Date & Time of sample collection		24.07.2024 at 12:20Hrs	Date & Time of sample receipt at the lab	24.07.2024 a	it 18:00 Hrs
Point of Collection	1. 2.	Near Nathamalai bus sto Near Kanthakumaran bus	Page No 1 of	1	

DEE Code No.		1	2	
Lab Code No.	Unit	753	754	Test Method
Parameters				
pH @ 25°C	Number	7.69	7.65	APHA 23rd Edn 2017, 4500 H+ B
Total Suspended solids @ 105°C	mg/L	10	10	APHA 23rd Edn 2017, 2540 D
Total Dissolved Solids @ 180°C	mg/L	540	530	APHA 23rd Edn 2017, 2540-C
BOD (3 days @ 27°C)	mg/L	05	06	IS 3025 (Part – 44) :1993, Reaff: 2009
COD	mg/L	40	40	IS 3025 (Part – 58), Reaff 2006
Chloride as Cl	mg/L	250	240	APHA 23rd Edn 2017, 4500-Cl B
Sulphate as SO₄	mg/L	65	60	APHA 23rd Edn 2017 4500-SO ₄ ²⁻ - E
Dissolved Oxygen	mg/L	5.9	6.0	APHA 23rd Edn 2017, 2540-DO
Sulphide	mg/L	<2	<2	APHA 23rd Edn 2017-4500-NH₃C
Total Kjeldhal	mg/L	<2	<2	APHA 23rd Edn 2017-4500-N-B
	mg/L	<0.5	<0.5	APHA 23rd Edn 2017-4500-P-E
	mg/L	3.8	4.2	APHA 23rd Edn 2017 4500-SO ₄ 2 E
Percent Sodium	%	21	23	In House Method : AEL-CUD/SOP/27 Issue No.01/Date. 18.10.2013
	mg/L	<2	<2	APHA 23rd Edn 2017-4500-NH3
	Lab Code No. Parameters pH @ 25°C Total Suspended solids @ 105°C Total Dissolved Solids @ 180°C BOD (3 days @ 27°C) COD Chloride as Cl Sulphate as SO ₄ Dissolved Oxygen Sulphide Total Kjeldhal Nitrogen Phosphates Potassium Percent Sodium	Lab Code No. ParametersUnitpH @ 25°CNumberTotal Suspended solids @ 105°Cmg/LTotal Dissolved Solids @ 180°Cmg/LBOD (3 days @ 27°C)mg/LCODmg/LChloride as Clmg/LSulphate as SO4mg/LDissolved Oxygenmg/LSulphidemg/LTotal Kjeldhal 	Lab Code No. ParametersUnitParameters753pH @ 25°CNumber7.69Total Suspended solids @ 105°Cmg/L10Total Dissolved Solids @ 180°Cmg/L540BOD (3 days @ 27°C)mg/L05CODmg/L40Chloride as Clmg/L250Sulphate as SO4mg/L65Dissolved Oxygenmg/L5.9Sulphidemg/L<2	Lab Code No. Parameters Unit 753 754 pH @ 25°C Number 7.69 7.65 Total Suspended solids @ 105°C mg/L 10 10 Total Dissolved Solids @ 180°C mg/L 540 530 BOD (3 days @ 27°C) mg/L 05 06 COD mg/L 40 40 Chloride as Cl mg/L 250 240 Sulphate as SO ₄ mg/L 65 60 Dissolved Oxygen mg/L 5.9 6.0 Sulphide mg/L <2

Note: <MDL indicates Less than minimum detectable limit.
Statement to the effect that the results relate only to the items tested.

ES ESTION 24

Chief Scientific Officer, TNPCB/AEL/CUDDALORE



ROA NO: 07/755, 07/756, Dt: 23/08/2024

Name & Address of the sender		District Environmental E Tamilnadu Pollution Con	Date of Analysis	25.07.2024		
Nature & Number of samples.	:	02 Number of veeranam lake water samples	02 Number of veeranam lake water Sample Quantity		Sealed and Fastened in 2.5 L polythene container	
Date & Time of sample collection		24.07.2024 at 12:20Hrs	Date & Time of sample receipt at the lab	24.07.2024 a	t 18:00 Hrs	
Point of Collection	1. 2.	Near Thenpathi bus stop Near Paripoorananatham	Page No 1 of 1			

SI.	DEE Code No.		3	4	
No.	Lab Code No.	Unit	755	756	Test Method
	Parameters		755	730	
1.	pH @ 25°C	Number	7.67	7.78	APHA 23rd Edn 2017, 4500 H+ B
2.	Total Suspended solids @ 105°C	mg/L	10	10	APHA 23rd Edn 2017, 2540 D
3.	Total Dissolved Solids @ 180°C	mg/L	538	520	APHA 23rd Edn 2017, 2540-C
4.	BOD (3 days @ 27°C)	mg/L	06	04	IS 3025 (Part – 44) :1993, Reaff: 2009
5.	COD	mg/L	48	32	IS 3025 (Part - 58), Reaff 2006
6.	Chloride as Cl	mg/L	220	210	APHA 23rd Edn 2017, 4500-CI B
7.	Sulphate as SO ₄	mg/L	55	85	APHA 23rd Edn 2017 4500-SO ₄ ²⁻ - E
8.	Dissolved Oxygen	mg/L	5.9	6.1	APHA 23rd Edn 2017, 2540-DO
9.	Sulphide	mg/L	<2	<2	APHA 23rd Edn 2017-4500-NH₃C
10.	Total Kjeldhal	mg/L	<2	<2	APHA 23rd Edn 2017-4500-N-B
11.	Nitrogen Phosphates	mg/L	<0.5	<0.5	APHA 23rd Edn 2017-4500-P-E
12.	Potassium	mg/L	4.2	4.8	APHA 23rd Edn 2017 4500-SO ₄ 2 E
13.	Percent Sodium	%	22	21	In House Method : AEL-CUD/SOP/27 Issue No.01/Date. 18.10.2013
	1. 1.11/1	mg/L	<2	<2	APHA 23rd Edn 2017-4500-NH3

Note: <MDL indicates Less than minimum detectable limit.
Statement to the effect that the results relate only to the items tested.

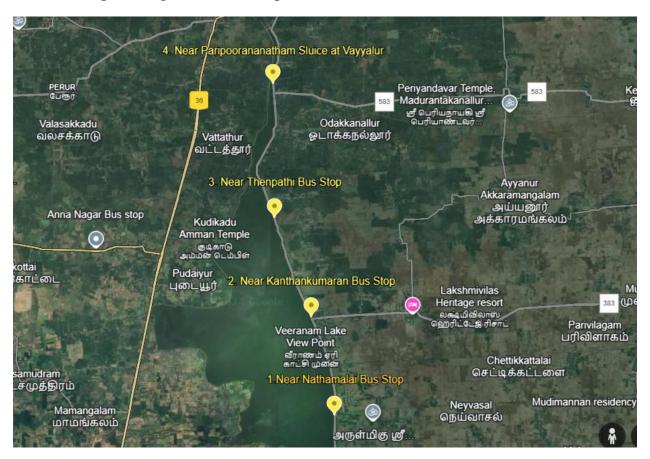
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Chief Scientific Officer, TNPCB/AEL/CUDDALORE

O.A.No. 107 of 2023 (SZ)

Suo Motu based on 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"

Map Showing the Point of Sample Collection at Veeranam Lake on 24.07.2024



Maps showing the location of sample collection points, in and around M/s. NLC India Ltd





The locations of point of collection of water samples, where presence of Mercury was observed and their respective distance from all three mines pertaining to M/s. NLC India Ltd:

	Location	Di	Mercury content (in		
Water Sample Location	with respect to Mines	Mine I	Mine IA	Mine II	mg/L) sample taken on 03.04.2024
Vellankulam (Ground Water)	u/s	2.35	7.13	8.45	0.005
Vadakuvellore - Ammeri (Surface Water)	d/s	1.22	6.58	1.84	0.019
Ayyan lake (Surface Water)	d/s	5.40	2.56	6.46	0.010
Discharge from TS II (Surface Water)	u/s	2.00	6.93	2.85	0.027
Kootu Kudineer (Valayamadevi - Surface Water)	u/s	5.52	5.75	0.23	0.014
Walajah Lake (Surface Water)	d/s	6.69	5.30	4.99	0.018

The map indicating direction & distance of each sample location:

1. Vellankullam: Ground water source located to the u/s direction of the NLCIL Mines.



2. Vadakuvellore Ammeri - Surface water source located to the d/s direction of the NLCIL Mine I and u/s of Mine II



3. Iyyan Lake Ammeri - Surface water source located to the d/s direction of the NLCIL Mines.

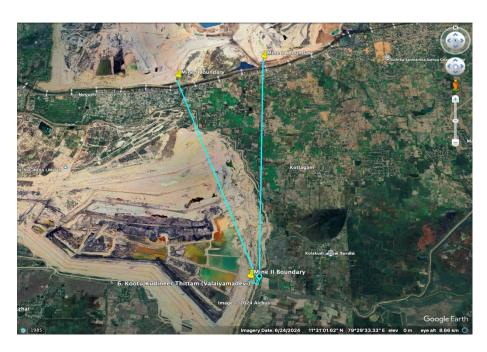


4. **Discharge from TPS II** - Surface water source located at the u/s direction of



the NLCIL Mines

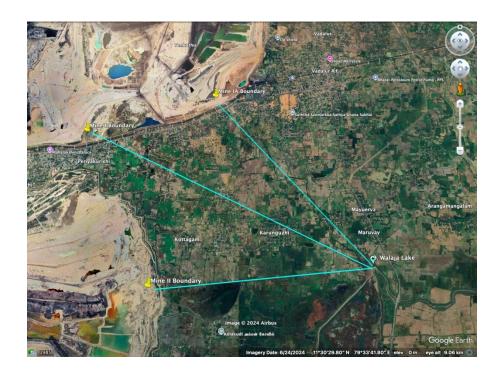
5. Kootu Kudineer Thittam: Valayamadevi - Surface water source located to



the u/s direction of the NLCIL Mines

Walajah Lake: Surface water source located to the d/s direction of the NLCIL

6. Mines



17 Annexure

COMPARISON OF HEAVY METALS IN SURFACE WATER SAMPLES COLLECTED BY TNPCB WITH CUBE ENVIRONMENT LABORATORY REPORT

S.NO	e of the location : Ne			
	T didifficters	Surface water Standard (IS 2296 Class E)	TNPCB Report	M/s. CUBE Environment
1.	Zinc as Zn	-	0.1272	Laboratory
2.	Cadmium as Cd		BDL	0.02
•	NP 1 1 1		[DL 0.1]	BLQ [LOQ:0.02
3.			BDL [DL 0.2]	0.02
4.		-	BDL [DL 0.5]	0.03
5.	Arsenic as As			BDL [DL:0.1]
6.	Total Chromium as Cr	-	BDL [DL 0.5]	BLQ [LOQ:0.05
7.	Mercury as Hg	-	0.0047	BDL [DL: 0.001
8.	Selenium as Se		-	BDL [DL:0.01]
9.	Calcium as Ca		31	36.1
10.	Magnesium as Mg	•	8	15.3
11.		-	0.1966	BDL [DL:0.01]
12.	Iron as Fe		1.0684	1.8
Name	of the location : Disc	charge from NNTPS	1.0004	1.8
S.NO	Parameters	Surface water	TNPCB	M/s. CUBE
		Standard (IS 2296 Class E)	Report	Environment Laboratory
1.	Zinc as Zn	•	BDL [DL 0.1]	0.10
2.	Cadmium as Cd	_	BDL [DL 0.1]	BLQ [LOQ:0.02]
3.	Nickel as Ni	-	BDL [DL 0.2]	0.08
4. 5.	Lead as Pb	IDL 0		0.052
6.	Arsenic as As	•	-	BDL [DL:0.1]
	Total Chromium as Cr		BDL [DL 0.5]	BLQ [LOQ:0.05]
7.	Mercury as Hg	- 1	0.0014	BDL [DL: 0.001]
8.	Selenium as Se			BDL [DL:0.01]
9.	Calcium as Ca		64	72.0
10.	Magnesium as Mg	• 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	31	21.9
11.	Manganese as Mn		10.2328	0.733
12.	Iron as Fe	•	3.1226	3.0
ame o	f the location : Direc	t Discharge from TP	S-I	
NO		Surface water Standard (IS 2296 Class E)	TNPCB Report	M/s. CUBE Environment
1.	Zinc as Zn	-	BDL [DL 0.1]	Laboratory 0.10
2.	Cadmium as Cd	<u>-</u>	BDL [DL 0.1]	BLQ [LOQ:0.02]
3.	Nickel as Ni	-	BDL [DL 0.2]	0.07
	Lead as Pb		BDL [DL 0.5]	0.08
	Arsenic as As	-	-	BDL [DL:0.1]
SECTION OF THE RESERVED AND THE PERSON OF TH	Total Chromium as Cr	-	BDL [DL 0.5]	BLQ [LOQ:0.05]

7.	Mercury as Hg	<u>-</u>	0.0034	BDL [DL: 0.001]
8.	Selenium as Se	_18		BDL [DL:0.01]
9.	Calcium as Ca		48	54.8
10.	Magnesium as Mg	•	14	12.4
11.	Manganese as Mn	-	0.1486	BDL [DL:0.01]
12.	Iron as Fe	-	BDL [DL 0.05]	0.6
Name o	f the location : Disc	harge from Neyveli T		
S.NO	Parameters	Surface water	TNPCB	M/s. CUBE
		Standard (IS 2296 Class E)	Report	Environment Laboratory
1.	Zinc as Zn	-	BDL [DL 0.1]	0.12
2.	Cadmium as Cd	<u> </u>	BDL [DL 0.1]	BLQ [LOQ:0.02]
3.	Nickel as Ni	•	0.2093	0.12
4.	Lead as Pb		BDL [DL 0.5]	0.092
5.	Arsenic as As	•	-	BDL [DL:0.1]
6.	Total Chromium as Cr		BDL [DL 0.5]	BLQ [LOQ:0.05]
7.	Mercury as Hg	-	0.0015	BDL [DL: 0.001]
8.	Selenium as Se		-	BDL [DL:0.01]
9.	Calcium as Ca	-	88	97.2
10.	Magnesium as Mg		29	24.8
	The state of the s	-	11.9337	0.655
11.	Manganese as Min			
12.	Manganese as Mn Iron as Fe		2.6516	5.0
12. Name o	Iron as Fe of the location : Opp	- osite to Main Gate of ar Valayamadevi		
12. Name o Kootuk	Iron as Fe	Surface water Standard (IS 2296		M/s. CUBE Environment
12. Name o Kootuk	Iron as Fe of the location : Opp Cudineer Thittam nea	r Valayamadevi Surface water	TNPCB	M/s. CUBE
Name of KootuK S.NO	Iron as Fe of the location : Opp (udineer Thittam nea Parameters	Surface water Standard (IS 2296	TNPCB Report	M/s. CUBE Environment Laboratory 0.09 BLQ [LOQ:0.02]
12. Name of KootuK S.NO	Iron as Fe of the location : Opp Sudineer Thittam nea Parameters Zinc as Zn	Surface water Standard (IS 2296	TNPCB Report BDL [DL 0.1] BDL [DL 0.1] BDL [DL 0.1]	M/s. CUBE Environment Laboratory 0.09 BLQ [LOQ:0.02]
12. Name of KootuK S.NO 1.	Iron as Fe of the location : Opp (udineer Thittam nea Parameters Zinc as Zn Cadmium as Cd	Surface water Standard (IS 2296	TNPCB Report BDL [DL 0.1] BDL [DL 0.1] BDL BDL BDL	M/s. CUBE Environment Laboratory 0.09 BLQ [LOQ:0.02] 0.09 0.11
12. Name of KootuK S.NO 1. 2.	Iron as Fe of the location : Opp Kudineer Thittam nea Parameters Zinc as Zn Cadmium as Cd Nickel as Ni	Surface water Standard (IS 2296	TNPCB Report BDL [DL 0.1] BDL [DL 0.1] BDL [DL 0.1] BDL [DL 0.5]	M/s. CUBE Environment Laboratory 0.09 BLQ [LOQ:0.02] 0.09 0.11 BDL [DL:0.1]
12. Name of KootuK S.NO 1. 2. 3. 4.	Iron as Fe of the location: Opp Gudineer Thittam nea Parameters Zinc as Zn Cadmium as Cd Nickel as Ni Lead as Pb Arsenic as As Total Chromium as	Surface water Standard (IS 2296	TNPCB Report BDL [DL 0.1] BDL [DL 0.1] BDL [DL 0.1] BDL [DL 0.1]	M/s. CUBE Environment Laboratory 0.09 BLQ [LOQ:0.02] 0.09 0.11
12. Name of KootuK S.NO 1. 2. 3. 4. 5. 6.	Iron as Fe of the location : Opp Gudineer Thittam nea Parameters Zinc as Zn Cadmium as Cd Nickel as Ni Lead as Pb Arsenic as As Total Chromium as Cr	Surface water Standard (IS 2296	TNPCB Report BDL [DL 0.1] BDL [DL 0.1] BDL [DL 0.1] BDL [DL 0.5] - BDL	M/s. CUBE Environment Laboratory 0.09 BLQ [LOQ:0.02] 0.09 0.11 BDL [DL:0.1]
12. Name of KootuK S.NO 1. 2. 3. 4. 5. 6.	Iron as Fe of the location: Opp Gudineer Thittam nea Parameters Zinc as Zn Cadmium as Cd Nickel as Ni Lead as Pb Arsenic as As Total Chromium as Cr Mercury as Hg	Surface water Standard (IS 2296	TNPCB Report BDL [DL 0.1] BDL [DL 0.1] BDL [DL 0.5] - BDL [DL 0.5]	M/s. CUBE Environment Laboratory 0.09 BLQ [LOQ:0.02] 0.09 0.11 BDL [DL:0.1] 0.07
12. Name of KootuK S.NO 1. 2. 3. 4. 5. 6.	Iron as Fe of the location: Oppoudineer Thittam near Parameters Zinc as Zn Cadmium as Cd Nickel as Ni Lead as Pb Arsenic as As Total Chromium as Cr Mercury as Hg Selenium as Se	Surface water Standard (IS 2296	TNPCB Report BDL [DL 0.1] BDL [DL 0.1] BDL [DL 0.5] - BDL [DL 0.5]	M/s. CUBE Environment Laboratory 0.09 BLQ [LOQ:0.02] 0.09 0.11 BDL [DL:0.1] 0.07
12. Name of KootuK S.NO 1. 2. 3. 4. 5. 6. 7. 8. 9.	Iron as Fe of the location: Opp Kudineer Thittam nea Parameters Zinc as Zn Cadmium as Cd Nickel as Ni Lead as Pb Arsenic as As Total Chromium as Cr Mercury as Hg Selenium as Se Calcium as Ca	Surface water Standard (IS 2296	BDL [DL 0.1] BDL [DL 0.1] BDL [DL 0.1] BDL [DL 0.5] - BDL [DL 0.5] - 48	M/s. CUBE Environment Laboratory 0.09 BLQ [LOQ:0.02] 0.09 0.11 BDL [DL:0.1] 0.07 BDL [DL:0.01] BDL [DL:0.01]
12. Name of KootuK S.NO 1. 2. 3. 4. 5. 6. 7. 8. 9. 10.	Iron as Fe of the location: Opp Youdineer Thittam near Parameters Zinc as Zn Cadmium as Cd Nickel as Ni Lead as Pb Arsenic as As Total Chromium as Cr Mercury as Hg Selenium as Se Calcium as Ca Magnesium as Mg	ar Valayamadevi Surface water Standard (IS 2296 Class E)	BDL [DL 0.1] BDL [DL 0.1] BDL [DL 0.1] BDL [DL 0.5]	M/s. CUBE Environment Laboratory 0.09 BLQ [LOQ:0.02] 0.09 0.11 BDL [DL:0.1] 0.07 BDL [DL:0.01] BDL [DL:0.01] 54.8 17.3
12. Name of KootuK S.NO 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11.	Iron as Fe of the location: Opp Rudineer Thittam nea Parameters Zinc as Zn Cadmium as Cd Nickel as Ni Lead as Pb Arsenic as As Total Chromium as Cr Mercury as Hg Selenium as Se Calcium as Ca Magnesium as Mg Manganese as Mn	ar Valayamadevi Surface water Standard (IS 2296 Class E)	BDL [DL 0.1] BDL [DL 0.1] BDL [DL 0.1] BDL [DL 0.5] - BDL [DL 0.5] - 48	M/s. CUBE Environment Laboratory 0.09 BLQ [LOQ:0.02] 0.09 0.11 BDL [DL:0.1] 0.07 BDL [DL:0.01] BDL [DL:0.01] 54.8
12. Name of KootuK S.NO 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12.	Iron as Fe of the location: Opp Gudineer Thittam nea Parameters Zinc as Zn Cadmium as Cd Nickel as Ni Lead as Pb Arsenic as As Total Chromium as Cr Mercury as Hg Selenium as Se Calcium as Ca Magnesium as Mg Manganese as Mn Iron as Fe	ar Valayamadevi Surface water Standard (IS 2296 Class E)	BDL [DL 0.1] BDL [DL 0.1] BDL [DL 0.1] BDL [DL 0.5]	M/s. CUBE Environment Laboratory 0.09 BLQ [LOQ:0.02] 0.09 0.11 BDL [DL:0.1] 0.07 BDL [DL:0.01] BDL [DL:0.01] 54.8 17.3 BDL [DL:0.01]
12. Name of KootuK S.NO 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12.	Iron as Fe of the location: Opp Gudineer Thittam nea Parameters Zinc as Zn Cadmium as Cd Nickel as Ni Lead as Pb Arsenic as As Total Chromium as Cr Mercury as Hg Selenium as Se Calcium as Ca Magnesium as Mg Manganese as Mn Iron as Fe	Surface water Standard (IS 2296 Class E) Surface water Standard (IS 2296 Class E) Surface water Standard (IS 2296	BDL [DL 0.1] BDL [DL 0.1] BDL [DL 0.1] BDL [DL 0.5]	M/s. CUBE Environment Laboratory 0.09 BLQ [LOQ:0.02] 0.09 0.11 BDL [DL:0.1] 0.07 BDL [DL:0.01] BDL [DL:0.01] 54.8 17.3 BDL [DL:0.01]
12. Name of KootuK S.NO 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. Name of	Iron as Fe of the location: Oppoudineer Thittam near Parameters Zinc as Zn Cadmium as Cd Nickel as Ni Lead as Pb Arsenic as As Total Chromium as Cr Mercury as Hg Selenium as Se Calcium as Ca Magnesium as Mg Manganese as Mn Iron as Fe of the location: Coa	Surface water Standard (IS 2296 Class E)	BDL [DL 0.1] BDL [DL 0.1] BDL [DL 0.1] BDL [DL 0.5]	M/s. CUBE Environment Laboratory 0.09 BLQ [LOQ:0.02] 0.09 0.11 BDL [DL:0.1] 0.07 BDL [DL:0.01] 54.8 17.3 BDL [DL:0.01] 0.40 M/s. CUBE Environment
12. Name of Kootuk S.NO 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. Name of S.NO	Iron as Fe of the location: Oppoudineer Thittam near Parameters Zinc as Zn Cadmium as Cd Nickel as Ni Lead as Pb Arsenic as As Total Chromium as Cr Mercury as Hg Selenium as Se Calcium as Ca Magnesium as Mg Manganese as Mn Iron as Fe of the location: Coa	Surface water Standard (IS 2296 Class E) Surface water Standard (IS 2296 Class E) Surface water Standard (IS 2296	BDL [DL 0.1] BDL [DL 0.1] BDL [DL 0.1] BDL [DL 0.5]	M/s. CUBE Environment Laboratory 0.09 BLQ [LOQ:0.02] 0.09 0.11 BDL [DL:0.1] 0.07 BDL [DL:0.01] 54.8 17.3 BDL [DL:0.01] 0.40 M/s. CUBE Environment Laboratory
12. Name of KootuK S.NO 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. Name of S.NO	Iron as Fe of the location: Opp Gudineer Thittam near Parameters Zinc as Zn Cadmium as Cd Nickel as Ni Lead as Pb Arsenic as As Total Chromium as Cr Mercury as Hg Selenium as Se Calcium as Ca Magnesium as Mg Manganese as Mn Iron as Fe of the location: Coa Parameters	Surface water Standard (IS 2296 Class E) Surface water Standard (IS 2296 Class E) Surface water Standard (IS 2296	BDL [DL 0.1] BDL [DL 0.1] BDL [DL 0.1] BDL [DL 0.5]	M/s. CUBE Environment Laboratory 0.09 BLQ [LOQ:0.02] 0.09 0.11 BDL [DL:0.1] 0.07 BDL [DL:0.01] 54.8 17.3 BDL [DL:0.01] 0.40 M/s. CUBE Environment Laboratory 0.02

	F A	19		
	5. Arsenic as As6. Total Chromium		-	BDL [DL:0.1]
	tall of morniality	as -	BDL	BDL [DL:0.05
	Cr		[DL 0.5]	
	7. Mercury as Hg		0.0032	BDL [DL: 0.00
	3. Selenium as Se	out ages 1	•	BDL [DL:0.01]
	O. Calcium as Ca		14	15.7
	0. Magnesium as M		4	5.71
	Manganese as M	In	BDL [DL 0.01]	BDL [DL:0.01]
1.	2. Iron as Fe		BDL	BLQ [LOQ:0.05
Nam	e of the location . D		[DL 0.05]	524 [204.0.05
Disc	harge	aravanar River Carryi	ng NLC Mine-I	
S.NO		Surface water	TNIDOD	
		Standard (IS 2296 Class E)	TNPCB Report	M/s. CUBE Environment
1.	Zinc as Zn		BDL	Laboratory 0.07
2.	Codmium as O.I.		[DL 0.1]	0.07
3.	- diaminant ao og	•	0.1234	BLQ [LOQ:0.02
٥.	Nickel as Ni	-	BDL	0.09
4.	Lead as Pb		[DL 0.2]	
			BDL [DL 0.5]	0.13
5.	Arsenic as As	-	[DL 0.5]	BDL [DL:0.1]
6.	Total Chromium as	S -	BDL	
7.	Cr		[DL 0.5]	0.072
8.	Mercury as Hg	-	0.0034	BDL [DL: 0.001]
	Selenium as Se	•	•	BDL [DL:0.01]
9.	Calcium as Ca	-	64	72
10.	granding at ing		14	19.2
11.	Jan 1900 do IVIII	-	1.3658	BDL [DL:0.01]
12.		- Inc	3.1241	8
Name	of the location : Wa			
S.NO	Parameters	Surface water Standard (IS 2296 Class E)	TNPCB Report	M/s. CUBE Environment Laboratory
1.	Zinc as Zn	-	0.1173	0.13
2.	Cadmium as Cd		BDL	BLQ [LOQ:0.02]
3.	Nickel as Ni		[DL 0.1]	[4.0.02]
4.	Lead as Pb	•	0.2307	0.14
			BDL [DL 0.5]	0.13
5.	Arsenic as As		-	BDL [DL:0.1]
6.	Total Chromium as	-	BDL	0.05
-	Cr		[DL 0.5]	
7.	Mercury as Hg		0.0045	BDL [DL: 0.001]
8.	Selenium as Se	-	-	BDL [DL:0.01]
9.	Calcium as Ca		58	59.6
10.	Magnesium as Mg		17	22.8
11.	Manganese as Mn		5.1957	0.281
12.	Iron as Fe		0.5815	0.2
ame o	f the location: Artiouth side of NNTPS.	ficial Lake located at l	North side of	
ame o	f the location : Articular	west side of abandor	ned ash pond	M/o CUDE
ame o	outh side of NNIPS,	Surface water Standard (IS 2296	ned ash pond TNPCB	M/s. CUBE
ame of S-II, So .NO	Parameters	west side of abandor	ned ash pond	Environment
ame or S-II, So .NO	Parameters Zinc as Zn	Surface water Standard (IS 2296	TNPCB Report	
ame of S-II, So	Parameters	Surface water Standard (IS 2296	ned ash pond TNPCB Report	Environment Laboratory

			[DL 0.2]	
4.	Lead as Pb	-20	BDL	0.13
	Arsenic as As		[DL 0.5] -	BDL [DL:0.1]
5.			BDL	0.05
6.	Total Chromium as Cr		[DL 0.5]	DDL (DL 0 0041°
7.	Mercury as Hg	-	BDL [DL 0.001]	BDL [DL: 0.001]
8.	Selenium as Se		•	BDL [DL:0.01]
9.	Calcium as Ca		49	50
10.	Magnesium as Mg	•	4	9.72
11.	Manganese as Mn	-	3.7870	0.262
12.	Iron as Fe	•	0.3350	0.4
	of the location : Kar	jamanadanpettai por	nd water	
S.NO	Parameters	Surface water Standard (IS 2296 Class E)	TNPCB Report	M/s. CUBE Environment Laboratory
1.	Zinc as Zn		BDL [DL 0.1]	0.039
2.	Cadmium as Cd		BDL [DL 0.1]	BLQ [LOQ:0.02]
3.	Nickel as Ni	÷	BDL [DL 0.2]	0.08
4.	Lead as Pb	<u>-</u>	BDL [DL 0.5]	0.24
5.	Arsenic as As		-	BDL [DL:0.1]
6.	Total Chromium as Cr	-	BDL [DL 0.05]	0.06
7.	Mercury as Hg		0.0029	BDL [DL: 0.001]
	Selenium as Se		-	BDL [DL:0.01]
8.			6	6.28
9.	Calcium as Ca		3	39.2
10.	Magnesium as Mg		0.0659	BDL [DL:0.1]
11. 12.	C NEW TOWNS OF THE PARTY OF THE	-	BDL [DL 0.05]	0.6
Nama	of the location: lyy	an Lake	[DE 0.00]	
S.NO	Parameters	Surface water Standard (IS 2296 Class E)	TNPCB Report	M/s. CUBE Environment Laboratory
1.	Zinc as Zn		0.741	0.47
2.	Cadmium as Cd		BDL [DL 0.1]	BLQ [LOQ:0.02]
3.	Nickel as Ni		0.2371	0.11
4.	Lead as Pb	- -	BDL [DL 0.5]	0.054
5.	Arsenic as As	-	-	BDL [DL:0.1]
6.	Total Chromium as		BDL [DL 0.5]	0.052
7.	Mercury as Hg		0.0027	BDL [DL: 0.001]
8.	Selenium as Se	_		BDL [DL:0.01]
	Calcium as Ca		34	39.7
9.		_	11	10.1
10. 11.	A STATE OF THE PARTY OF THE PAR		6.7046	0.357
			0.7310	0.61
			U.I.O.IU	0.01
12	. Iron as Fe	- Gerikuppam Village Ei		0.01
12 Name	. Iron as Fe of the location : K	arikuppam Village Fi	sh Pond	M/s. CUBE
12	. Iron as Fe of the location : K	Surface water Standard (IS 2296		
12 Name	Iron as Fe of the location : K Parameters	Surface water	sh Pond TNPCB	M/s. CUBE Environment

		21		
3.	Nickel as Ni	-	BDL [DL 0.2]	0.027
4.	Lead as Pb	-	BDL [DL 0.5]	0.076
. 5.	Arsenic as As		[DE 0.5]	BDL [DL:0.1
6.	Total Chromium as	3	BDL	0.08
	Cr		[DL 0.5]	0.00
7.	Mercury as Hg		0.0042	BDL [DL: 0.00
8.	Selenium as Se	-		BDL [DL:0.01]
9.	Calcium as Ca		43	90.5
10.	9	-	32	3.85
11.			0.3662	BDL [DL:0.01]
12.	Iron as Fe	The same training and the	BDL	BLQ [LOQ:0.05
Name Power	of the location :	Buckingham Canal n	[DL 0.05] ear the Thermal	
S.NO	Parameters	Surface water	TNPCB	M/s. CUBE
		Standard (IS 2296 Class E)	Report	Environment Laboratory
1.	Zinc as Zn	-	BDL [DL 0.1]	BLQ [LOQ:0.02
2.	Cadmium as Cd		0.1890	BLQ [LOQ:0.02
3.	Nickel as Ni		BDL	0.033
4.	Lead as Pb	<u> </u>	[DL 0.2] BDL	0.085
			[DL 0.5]	0.085
5.	Arsenic as As	<u>.</u>	- 1	BDL [DL:0.1]
6.	Total Chromium as Cr		BDL [DL 0.5]	0.07
7.	Mercury as Hg		0.115	BDL [DL: 0.001
8.	Selenium as Se			BDL [DL:0.01]
9.	Calcium as Ca	• **	43	81.7
10.	Magnesium as Mg		28	6.74
11.	Manganese as Mn	- 124 Legin	0.4425	BDL [DL:0.01]
12.	Iron as Fe	7 m - 100 -	BDL	0.08
Name o	of the location:	line I Outlet Veenage	[DL 0.05]	
S.NO	Parameters	Surface water Standard (IS 2296 Class E)	TNPCB Report	M/s. CUBE Environment Laboratory
1.	Zinc as Zn		0.5063	0.36
2.	Cadmium as Cd	<u> -</u>	0.2638	BLQ [LOQ:0.02
3.	Nickel as Ni	-	0.4725	0.25
4.	Lead as Pb	-	BDL	0.12
5.	Arsenic as As		[DL 0.5]	DDL IDL A (I
6.	Total Chromium as		BDL	BDL [DL:0.1]
	Cr		[DL 0.5]	0.18
7.	Mercury as Hg		0.0091	BDL [DL: 0.001]
8.	Selenium as Se		0.0081	BDL [DL: 0.001] BDL [DL:0.01]
9.	Calcium as Ca		101	72.2
10.	Magnesium as Mg		30	7.22
11.	Manganese as Mn	<u></u>	4.6750	0.495
12.	Iron as Fe		4.8477	0.24
	f the location : R kuppamvadakkuvell	omapuri ur		V.27
i.NO	Parameters	Surface water Standard (IS 2296 Class E)	TNPCB Report	M/s. CUBE Environment Laboratory
1.	Zinc as Zn		BDL	0.04

			[DL 0.1]	
2.	Cadmium as Cd	22	0.1660	BLQ [LOQ:0.02]
3.	Nickel as Ni	-	0.2679	0.087
4.	Lead as Pb	-	BDL [DL 0.5]	0.12
5.	Arsenic as As		•	BDL [DL:0.1]
6.	Total Chromium as Cr	-	BDL [DL 0.5]	0.14
7.	Mercury as Hg	- 1	0.0018	BDL [DL: 0.001]
8.	Selenium as Se		- 1	BDL [DL:0.01]
9.	Calcium as Ca	-	96	92.0
10.	Magnesium as Mg		24	26.9
11.	Manganese as Mn	<u>-</u>	5.2186	0.307
12.	Iron as Fe	•	1.1413	BLQ [LOQ:0.05]
Name o	f the location :	Vadakkuvellur Pond	near Sivan	
koil				
S.NO	Parameters	Surface water Standard (IS 2296 Class E)	TNPCB Report	M/s. CUBE Environment Laboratory
1.	Zinc as Zn	-	BDL [DL 0.1]	BLQ [LOQ:0.02]
2.	Cadmium as Cd		0.2015	BLQ [LOQ:0.02]
3.	Nickel as Ni		0.2260	0.035
4.	Lead as Pb	-	BDL [DL 0.5]	0.13
5.	Arsenic as As	-	-	BDL [DL:0.1]
6.	Total Chromium as Cr		BDL [DL 0.5]	0.13
7.	Mercury as Hg	-	0.0030	BDL [DL: 0.001]
8.	Selenium as Se		-	BDL [DL:0.01]
9.	Calcium as Ca		69	42.8
10.	Magnesium as Mg	- 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1	15	11.0
11.	Manganese as Mn		0.6189	BDL [DL:0.01]
12.	Iron as Fe	•	1.0398	BLQ [LOQ:0.05]
Name o	of the location:	Muappaneri Village		
S.NO	Parameters	Surface water Standard (IS 2296 Class E)	TNPCB Report	M/s. CUBE Environment Laboratory
1.	Zinc as Zn	-	BDL [DL 0.1]	BLQ [LOQ:0.02]
2.	Cadmium as Cd	-	0.1812	BLQ [LOQ:0.02]
3.	Nickel as Ni		BDL [DL 0.2]	0.039
4.	Lead as Pb	-	BDL [DL 0.5]	0.14
5.	Arsenic as As	•	-	BDL [DL:0.1]
6.	Total Chromium as Cr		BDL [DL 0.5]	0.15
7.	Mercury as Hg	-	BDL [DL 0.224]	BDL [DL: 0.001]
8.	Selenium as Se	-		BDL [DL:0.01]
9.	Calcium as Ca		74	44.4
10.	Magnesium as Mg	5	16	6.26
11.	Manganese as Mn	-	0.3690	BDL [DL:0.01]
12.	Iron as Fe	-	0.8580	BLQ [LOQ:0.05]

COMPARISON OF HEAVY METALS IN GROUND WATER SAMPLES COLLECTED BY TNPCB WITH CUBE ENVIRONMENT LABORATORY REPORT

S.I	ame of the location : Bore value of the location :		, manda	panikon Street,
0	4	Drinking water Standard (IS 10500 2012)	TNPCB Report	CUBE Environment Laboratory
	prial 25 C	6.5-8.5	5.91	6.60
	Liectrical Conductivity	-	144	
	3. Total Dissolved Solids at 180 °C	500	104	198 132
	4. Turbidity	1	23.3	
	Total Suspended Solids at 105 °C		24	29.8 BLQ [LOQ:2.0]
6	Oil & Grease		BDL	BLQ [LOQ:4.0]
7	Triudride as F	1	[DL 2] 0.965	
8	Childride as C	250	15	0.20
9	Sulphates as SO4	200	10	27.7
10	Zinc as Zn			5.49
4.		5	BDL [DL 0.1]	0.04
11	Caumium as Cd	0.003	0.1045	BLQ [LOQ:0.02]
12	Mickel as M	0.02	BDL [DL 0.2]	0.07
13 14	Leau as PD	0.01	BDL [DL 0.5]	0.13
15	A TOOTHC AS AS	0.01	-	BDL [DL:0.1]
- 10	Chromium as Cr	0.05	BDL	BLQ [LOQ:0.05]
16	Mercury as Hg	0.001	[DL 0.5] BDL	BDL [DL:0.1]
17	Selenium as Se	0.01	[DL 0.001]	
18	Boron as B	0.5	BDL	BDL [DL:0.5] BDL [DL:0.1]
19	Total Hardness as CaCO3	200	[DL 0.001] 52	82.3
20	Calcium as Ca	75	14	
21	Magnesium as Mg	30	4	17.2
22	Manganese as Mn	0.1	0.0268	39.2
23	Sulphide as S	0.05	2.4	BDL [DL:0.01]
24	Aluminium as Al	0.03		BLQ [LOQ:1.0]
25	Total Alkalinity as CaCO3	200	52	BDL [DL:0.5] 44.9
~-	Iron as Fe	0.3	0.0797	PI O II OO
	Sodium as Na		11	BLQ [LOQ:0.05]
28 F	Potassium as K		1	4.88
29 E	Biochemical Oxygen Demand BOD) for 3 days at 27°C			0.97 BLQ [LOQ:2.0]
I De	nemical Oxygen emand (COD) the location : Located at V	-	8	4

.N	Parameters	water 24 Standard (IS 10500	TNPCB Report	M/s. CUBE Environment Laboratory
		2012) 6.5-8.5	5.47	6.15
1.	pH at 25°C	0.5-0.5	139	158
2. 3.		500	96	102
	180 °C	1	0.32	BLQ [LOQ:0.01]
4.	Turbidity	1	6	BLQ [LOQ:2.0]
5.	Total Suspended Solids at 105 °C	. -		BLQ [LOQ:4.0]
6.		-	BDL [DL 2]	
		1	0.830	0.14
7	The second secon	250	26	28.1
8	Officials	200	9	7.55
9	Sulphates as SO4		BDL	0.04
1	O Zinc as Zn	5	[DL 0.1]	
	14 0 1 1 0d	0.003	BDL	BLQ [LOQ:0.02]
1	Cadmium as Cd		[DL 0.1] BDL	0.10
1	12 Nickel as Ni	0.02	[DL 0.2]	
		0.01	BDL	0.15
	13 Lead as Pb		[DL 0.5]	BDL [DL:0.1]
	14 Arsenic as As	0.01	BDL	0.05
	15 Chromium as Cr	0.05	[DL 0.5]	
		0.001	0.0626	BDL [DL:0.1]
	16 Mercury as Hg	0.01	-	BDL [DL:0.5]
	17 Selenium as Se	0.5	BDL	BDL [DL:0.1]
	18 Boron as B	200	[DL 0.001]	70.6
	19 Total Hardness as	200		
	CaCO3	75	10	14.1
	20 Calcium as Ca	30	3	39.2
	21 Magnesium as Mg 22 Manganese as Mn	0.1	BDL	BDL [DL:0.01]
	22 Manganese as Mn	0.05	[DL 0.01]	BLQ [LOQ:1.0]
	23 Sulphide as S	0.05	4	BDL [DL:0.5]
	24 Aluminium as Al	0.03	20	18.7
	Total Alkalinity as CaCO3	200		0.16
	26 Iron as Fe	0.3	BDL [DL 0.1]	
		-	13	9.06
	27 Sodium as Na	<u></u>	1	5.97
	28 Potassium as K 29 Biochemical Oxygen Demand(BOD) for 3	-	2	BLQ [LOQ:2.0]
	days at 27°C Chemical Oxygen Demand (COD)	-	16	4
N	lame of the location : Ma	ariyamman Te	mple, Ayikuppa	m Village ort M/s. CUBE
0	S.NO Parameters	water Standar IS 1050	rd (Environment Laboratory
		2012) 6.5-8	5 5.68	6.23
	1. pH at 25°C		534	543
	2. Electrical Conduct	ivity	00,	

\wedge	Total Dissolved So at 180 °C	lids 500	382	318
TO THE PARTY	4. Turbidity	1	0.8	0.9
	Total Suspended So at 105 °C	olids	4	BLQ [LOQ:2.0]
	Oil & Grease	140.	BDL [DL 2]	BLQ [LOQ:4.0]
	Fluoride as F	1	0.672	0.14
8	Chiloride as Cl	250		55.3
9	Sulphates as SO4	200		81.4
1	0. Zinc as Zn	5	BDL	0.02
1	1. Cadmium as Cd	0.003	[DL 0.1] BDL	BLQ [LOQ:0.02]
12	2. Nickel as Ni	0.02	[DL 0.1] BDL	0.09
13	B. Lead as Pb	0.01	[DL 0.2] BDL	0.21
14	Arsenic as As	0.01	[DL 0.5]	
15		0.01	- DDI	BDL [DL:0.1]
16			BDL [DL 0.5]	0.06
17	Mercury as ng	0.001	0.0010	BDL [DL:0.1]
18	Selemum as Se	0.01		BDL [DL:0.5]
	Doloil as B	0.5	BDL [DL 0.001]	BDL [DL:0.1]
19	CaCO3	200	[DL 0.001] 184	212
20.	Calcium as Ca	75	61	50.0
21.	Magnesium as Mg	30	8	59.6
22.	Manganese as Mn	0.1	1.713	15.3
23.	Sulphide as S	0.05	BDL [DL 1]	0.13 BLQ [LOQ:1.0]
24.	Aluminium as Al	0.03	[5]	BDL [DL:0.5]
25.	Total Alkalinity as CaCO3	200	40	44.9
26.	Iron as Fe	0.3	BDL [DL 0.05]	BLQ [LOQ:0.05]
27.	Sodium as Na	-	33	27.00
28.	Potassium as K	-	3	15.09
29.	Biochemical Oxygen Demand (BOD) for 3 days at 27°C	- 1	2	BLQ [LOQ:2.0]
30.	Chemical Oxygen Demand (COD)	-	16	4
Name o	f the location: NLC Sup	plied Water	at II Mangalawa T	
S.NO	Parameters	Drinking	TNPCB Report	M/s. CUBE
		water Standard (IS 10500 2012)	22 Report	Environment Laboratory
1.	pH at 25°C	6.5-8.5	6.09	6.7
2.	Electrical Conductivity	•	280	301
3.	Total Dissolved Solids at 180 °C	500	192	172
4.	Turbidity	1	0.1	0.1
5.	Total Suspended Solids at 105 °C	-	4	BLQ [LOQ:2.0]

6.	Oil & Grease	 26	BDL [DL 2]	BLQ [LOQ:4.0]
7.	Fluorido os F	1	0.94	0.15
8.	Fluoride as F	250	29	25.8
9.	Chloride as Cl	200	49	25.1
10.	Sulphates as SO4 Zinc as Zn	5	BDL	BLQ [LOQ:0.02]
	ZINC as ZII	0.000	[DL 0.1] 0.1109	BLQ [LOQ:0.02]
11.	Cadmium as Cd	0.003	0.1109 BDL	BLQ [LOQ:0.02]
12.	Nickel as Ni	0.02	[DL 0.2]	
13.	Lead as Pb	0.01	BDL [DL 0.5]	0.021
14.	Arsenic as As	0.01	-	BDL [DL:0.1]
15.	Chromium as Cr	0.05	BDL [DL 0.05]	BLQ [LOQ:0.05]
16.	Mercury as Hg	0.001	0.0025	BDL [DL:0.1]
17.	Selenium as Se	0.01	•	BDL [DL:0.5]
18.	Boron as B	0.5	BDL [DL 0.001]	BDL [DL:0.1]
19.	Total Hardness as CaCO3	200	96	101.5
20.	Calcium as Ca	75	25	28.6
21.	Magnesium as Mg	30	8	7.22
22.	Manganese as Mn	0.1	0.1445	BDL [DL:0.01]
23.	Sulphide as S	0.05	3.2	BLQ [LOQ:1.0]
24.	Aluminium as Al	0.03	•	BDL [DL:0.5]
25.	Total Alkalinity as CaCO3	200	52	50.8
26.	Iron as Fe	0.3	0.2072	0.28
27.	Sodium as Na	-	17	11.2
28.	Potassium as K	-	1	6
29.	Biochemical Oxygen Demand (BOD) for 3 days at 27°C	- 	3	BLQ [LOQ:2.0]
30.	Chemical Oxygen	•	40	BLQ [LOQ:4.0]
Name o	of the location: At Block-	22 Pump Ho	use(Jawahar Co	llege)
S.NO	Parameters	Drinking water Standard (IS 10500 2012)	TNPCB Report	Environment Laboratory
1.	pH at 25°C	6.5-8.5	6.31	6.84
2.	Electrical Conductivity	-	105	157
3.	Total Dissolved Solids at 180 °C	500	72	95
4.	Turbidity	1	3.6	9.0
5.	Total Suspended Solids at 105 °C	- 110	4	4.2
6.	Oil & Grease		BDL [DL 2]	BLQ [LOQ:4.0]
7.	Fluoride as F	1	0.62	0.33
8.	Chloride as Cl	250	15	12.9
9.		200	6	2.04
10.	Sulphates as SO4 Zinc as Zn	5	BDL	BLQ [LOQ:0.02]

11.		- 0.000	DDI	DI O II OO O OO
	Cadmium as Cd	0.003	BDL [DL 0.1]	BLQ [LOQ:0.02]
12.	Nickel as Ni	0.02	BDL [DL 0.2]	BLQ [LOQ:0.02]
• 13.	Lead as Pb	0.01	BDL [DL 0.5]	0.035
14.	Arsenic as As	0.01		BDL [DL:0.1]
15.	Chromium as Cr	0.05	BDL [DL 0.05]	BLQ [LOQ:0.05]
16.	Mercury as Hg	0.001	0.0041	BDL [DL:0.1]
17.	Selenium as Se	0.01	-	BDL [DL:0.5]
18.	Boron as B	0.5	BDL [DL 0.001]	BDL [DL:0.1]
19.	Total Hardness as CaCO3	200	34	33.8
20.	Calcium as Ca	75	9	12.7
21.	Magnesium as Mg	30	3	BLQ [LOQ:1.0]
22.	Manganese as Mn	0.1	0.2060	BDL [DL:0.01]
23.	Sulphide as S	0.05	5.6	BLQ [LOQ:1.0]
24.	Aluminium as Al	0.03	-	BDL [DL:0.5]
25.	Total Alkalinity as CaCO3	200	32	43.5
26.	Iron as Fe	0.3	1.2206	BLQ [LOQ:0.05]
27.	Sodium as Na		19	11.2
28.	Potassium as K	- The	0.12	10.9
29.	Biochemical Oxygen Demand (BOD) for 3 days at 27°C	-	2	BLQ [LOQ:2.0]
30.	Chemical Oxygen Demand (COD)	-	16	12.2
	f the location : Vedhav			
S.No	Parameters	Drinking water	TNPCB Report	M/s. CUBE Environment
	(1) [1] (1) (1) [1] (1) [1] (1) (1) [1] (1) (1) [1] (1) (1) (1) [1] (1) (1) (1) (1) (1) (1) (1) (1) (1) (1)	Standard (IS 10500 2012)		Laboratory
1.	pH at 25°C		7.43	Laboratory 7.90
1.	pH at 25°C Electrical Conductivity	(IS 10500 2012)	7.43 1058	
7.000		(IS 10500 2012)		7.90
2.	Electrical Conductivity Total Dissolved	(IS 10500 2012) 6.5-8.5	1058	7.90 1177
2. 3.	Electrical Conductivity Total Dissolved Solids at 180 °C Turbidity Total Suspended	(IS 10500 2012) 6.5-8.5 - 500	1058 692	7.90 1177 720
 2. 3. 4. 	Electrical Conductivity Total Dissolved Solids at 180 °C Turbidity	(IS 10500 2012) 6.5-8.5 - 500	1058 692 2.78 12 BDL	7.90 1177 720 4.0
2. 3. 4. 5.	Electrical Conductivity Total Dissolved Solids at 180 °C Turbidity Total Suspended Solids at 105 °C	(IS 10500 2012) 6.5-8.5 - 500 1	1058 692 2.78 12	7.90 1177 720 4.0 BLQ [LOQ:2.0]
2. 3. 4. 5.	Electrical Conductivity Total Dissolved Solids at 180 °C Turbidity Total Suspended Solids at 105 °C Oil & Grease	(IS 10500 2012) 6.5-8.5 - 500 1 	1058 692 2.78 12 BDL [DL 2]	7.90 1177 720 4.0 BLQ [LOQ:2.0] BLQ [LOQ:4.0]
2. 3. 4. 5. 6.	Electrical Conductivity Total Dissolved Solids at 180 °C Turbidity Total Suspended Solids at 105 °C Oil & Grease Fluoride as F	(IS 10500 2012) 6.5-8.5 - 500 1 1	1058 692 2.78 12 BDL [DL 2] 1.361	7.90 1177 720 4.0 BLQ [LOQ:2.0] BLQ [LOQ:4.0] 0.55
2. 3. 4. 5. 6. 7. 8.	Electrical Conductivity Total Dissolved Solids at 180 °C Turbidity Total Suspended Solids at 105 °C Oil & Grease Fluoride as F Chloride as CI	(IS 10500 2012) 6.5-8.5 - 500 1 1 250	1058 692 2.78 12 BDL [DL 2] 1.361 178	7.90 1177 720 4.0 BLQ [LOQ:2.0] BLQ [LOQ:4.0] 0.55 173.3
2. 3. 4. 5. 6. 7. 8. 9.	Electrical Conductivity Total Dissolved Solids at 180 °C Turbidity Total Suspended Solids at 105 °C Oil & Grease Fluoride as F Chloride as CI Sulphates as SO4	(IS 10500 2012) 6.5-8.5 - 500 1 1 250 200	1058 692 2.78 12 BDL [DL 2] 1.361 178 94 0.3077 BDL	7.90 1177 720 4.0 BLQ [LOQ:2.0] BLQ [LOQ:4.0] 0.55 173.3 68.6
2. 3. 4. 5. 6. 7. 8. 9.	Electrical Conductivity Total Dissolved Solids at 180 °C Turbidity Total Suspended Solids at 105 °C Oil & Grease Fluoride as F Chloride as CI Sulphates as SO4 Zinc as Zn	(IS 10500 2012) 6.5-8.5 - 500 1 - 1 250 200 5	1058 692 2.78 12 BDL [DL 2] 1.361 178 94 0.3077 BDL [DL 0.1] BDL	7.90 1177 720 4.0 BLQ [LOQ:2.0] BLQ [LOQ:4.0] 0.55 173.3 68.6 0.15
2. 3. 4. 5. 6. 7. 8. 9. 10.	Electrical Conductivity Total Dissolved Solids at 180 °C Turbidity Total Suspended Solids at 105 °C Oil & Grease Fluoride as F Chloride as CI Sulphates as SO4 Zinc as Zn Cadmium as Cd	(IS 10500 2012) 6.5-8.5 - 500 1 1 250 200 5 0.003	1058 692 2.78 12 BDL [DL 2] 1.361 178 94 0.3077 BDL [DL 0.1]	7.90 1177 720 4.0 BLQ [LOQ:2.0] BLQ [LOQ:4.0] 0.55 173.3 68.6 0.15 BLQ [LOQ:0.02]

15	Chromium as Cr	0.05	BDL	0.06
16		28 0.001	[DL 0.05] 0.0044	BDL [DL:0.1]
17	Wiordary do rig	0.001	-	BDL [DL:0.5]
18	Coloniam de Co	0.5	BDL	BDL [DL:0.1]
10	Boron as B	0.0	[DL 0.001]	DDE [DE.C.1]
19	Total Hardness as CaCO3	200	228	246.8
20	Calcium as Ca	75	53	92.8
21	· Magnesium as Mg	30	23	3.37
22	. Manganese as Mn	0.1	1.5137	0.094
23	Sulphide as S	0.05	BDL [DL 1]	BLQ [LOQ:1.0]
24	Aluminium as Al	0.03	•	BDL [DL:0.5]
25	Total Alkalinity as CaCO3	200	188	244.4
26	non as r c	0.3	BDL [DL 0.05]	0.17
27	- Couldin do Ha	-	173	134
28	1 Ottassiain as it		12	28
29	Oxygen Demand (BOD) for 3 days at 27°C	-	2	BLQ [LOQ:2.0]
30	Chemical Oxygen Demand (COD)	-	32	12.2
	of the location : Pudukup	pam Village		
S.N o	Parameters	Drinking water Standard (IS 10500 2012)	TNPCB Report	M/s. CUBE Environment Laboratory
1.	pH at 25°C	6.5-8.5	8.04	8.75
2.	Electrical Conductivity	-	718	771
3.	Total Dissolved Solids at 180 °C	500	464	468
4.	Turbidity	1	6.49	0.89
5.	Total Suspended Solids at 105 °C	-	6	BLQ [LOQ:2.0]
6.	Oil & Grease	-	BDL	BLQ [LOQ:4.0]
7		1	[DL 2]	0.35
7.	Fluoride as F	250	2.646 94	90.3
8. 9.	Chloride as Cl	200	79	56.0
	Sulphates as SO4			
10	Zinc as Zn	5	0.1283	BLQ [LOQ:0.02]
11	Cadmium as Cd	0.003	0.1354	BLQ [LOQ:0.02]
12	Nickel as Ni	0.02	BDL [DL 0.2]	0.029
13	Loud do 1 b	0.01	BDL [DL 0.5]	0.06
14	711001110 00 710	0.01		BDL [DL:0.1]
15	Official action	0.05	BDL [DL 0.5]	0.06
16	Mercury as Hg	0.001	0.0054	BDL [DL:0.1]
17	Selenium as Se	0.01	-	BDL [DL:0.5]
18	20.0.1.00.2	0.5	BDL [DL 0.001]	BDL [DL:0.1]
19	Total Hardness as CaCO3	200	220	272.6

_	20 Calcium as Ca	75	66	88
-	wagnesium as Mg	30	. 14	13.5
	Manganese as Mn	0.1	0.2768	BDL [DL:0.01]
	Sulphide as S	0.05	4.8	BLQ [LOQ:1.0]
	Aluminium as Al	0.03		BDL [DL:0.5]
	Total Alkalinity as CaCO3	200	188	230
	26 Iron as Fe	0.3		
		0.3	BDL [DL 0.05]	0.16
	oodium as Na	-	66	56.2
	1 otassium as N	-	5	10.5
	Demand (BOD) for 3 days at 27°C	-	2	BLQ [LOQ:2.0]
	Chemical Oxygen Demand (COD)	-	16	12.2
S.N	me of the location : Karikup	pam Village		
0	rarameters	Drinking water Standard (IS 10500 2012)	TNPCB Report	M/s. CUBE Environment Laboratory
	priat 25 C	6.5-8.5	7.35	7.94
3	Liectrical Conductivity	- *	.514	588
	180 °C	500	324	346
4	Turbidity	1	0. 5	1.0
5	at 105 °C	-	4	BLQ [LOQ:2.0]
6.	Oil & Grease	-	BDL	BLQ [LOQ:4.0]
7.	i luolide as F	1	[DL 2] 1.817	
8.	Chiloride as Cl	250	74	0.28
9.	Sulphates as SO4	200	71	82.9
10	Zinc as Zn	5		40.2
11	Cadmium as Cd	0.003	0.2550	BLQ [LOQ:0.02]
12	Nickel as Ni	0.003	0.2393	BLQ [LOQ:0.02]
13			BDL [DL 0.2]	0.025
	Lead as PD	0.01	BDL [DL 0.5]	0.07
14 15	Arsenic as As	0.01	-	BDL [DL:0.1]
10	Chromium as Cr	0.05	BDL	0.07
16	Mercury as Hg	0.001	[DL 0.5]	
17	Selenium as Se	0.01	0.0029	BDL [DL:0.1]
18	Boron as B	0.5	BDL	BDL [DL:0.5]
19	Total Hardness as		[DL 0.001]	BDL [DL:0.1]
	CaCO3	200	392	212.9
20	Calcium as Ca	75	98	73.8
21	Magnesium as Mg	30	36	6.74
22	Manganese as Mn	0.1	1.5196	0.043
	Sulphide as S	0.05	8	BLQ [LOQ:1]
24	Aluminium as Al	0.03		
	Total Alkalinity as CaCO3	200	80	BDL [DL:0.5] 113.7

26	Iron as Fe	0.3	BDL IDL 0.051	BLQ [LOQ:0.05]
		30	[DL 0.05] 29	25.9
27	Sodium as Na		1	11.0
28	Potassium as K	and the second	3	BLQ [LOQ:2.0]
29	Biochemical Oxygen Demand (BOD) for 3			
30	days at 27°C Chemical Oxygen	<u>-</u>	40	BLQ [LOQ:4.0]
	Demand (COD)	aiar Nagar		
	of the location: Tholkapp	Drinking	TNPCB Report	M/s. CUBE
5.N 0	Parameters	water Standard (IS 10500		Environment Laboratory
		2012) 6.5-8.5	6.13	6.71
1.	pH at 25°C	0.0-0.0	414	460
2.	Electrical Conductivity	500	304	252
3.	Total Dissolved Solids at 180 °C		16	17
4.	Turbidity	1		14.0
5.	Total Suspended Solids at 105 °C	_	6	
6.	Oil & Grease	-	BDL [DL 2]	BLQ [LOQ:4.0]
7.		1	1.44	0.42
8.	Tallaction of the second of th	250	54	41.5
9.		200	93	52.9
	Sulphates as 304	5	BDL [DL 0.1]	BLQ [LOQ:0.02]
10		0.003	0.1665	BLQ [LOQ:0.02]
1	Oddina	0.003	0.2232	0.05
1:		0.02	BDL [DL 0.5]	0.12
1	3 Lead as Pb	0.01		BDL [DL:0.1]
1	4 Arsenic as As	0.01	BDL [DL 0.5]	0.14
1	5 Chromium as Cr		BDL [DL 0.119]	BDL [DL:0.1]
1	6 Mercury as Hg	0.001	DDE [DE 0.1.10]	BDL [DL:0.5]
1	7 Selenium as Se	0.01	BDL	BDL [DL:0.1]
1	8 Boron as B	0.5	[DL 0.001]	
1	Total Hardness as	200	292	123
	CaCO3 Calcium as Ca	75	72	38.0
	Carolani	30	27	6.73
	Magne	0.1	0.2028	BDL [DL:0.01]
		0.05	BDL[DL 1]	BLQ [LOQ:1]
	Sulphide as S	0.03	•	BDL [DL:0.5]
	24 Aluminium as Al 25 Total Alkalinity as	200	72	87.1
	CaCO3	0.3	8441	0.36
	26 Iron as Fe	-	25	28
	27 Sodium as Na		2	11.7
V.	28 Potassium as K		2	BLQ [LOQ:2.0]
	29 Biochemical Oxygen Demand (BOD) for 3 days at 27°C			BLQ [LOQ:4.0]
	Chemical Oxygen Demand (COD)	· ·	8	DEW [EGW.4.0]

COMPARISON OF HEAVY METALS IN SOIL SAMPLES COLLECTED BY TNPCB WITH CUBE ENVIRONMENT LABORATORY REPORT

1	e of the Location: Paddy D. Parameters	7 · · · · · · · · · · · · · · · · · · ·	one knometer i	OIII WATES STACE
SI.No	raiameters	Soll	TNPCB	M/s. CUBE
		standard		-invitoring
1	Zinc as Zn	mg/kg Resul		Laboratory
2	Nickel as Ni	45	15.394	20.5
3	Cadmium as Cd	1.4	6.142	3.75
4	Lead as Pb		6.1980	BLQ [LOQ:1.0
5	Arsenic as As	70	BDL [DL:0.5	8.85
6	E CONTROL OF THE CONT	12	-	BDL [DL:0.1]
7	Total Chromium as Cr		BDL [DL:0.05	5] 14.7
8	Mercury as Hg	6.6	0.31	BDL [DL:0.1]
	Selenium as Se	1.0		BDL [DL:0.5]
warne	of the Location: Agricu	ulture land ne	ear Ayyan Lake	
SI.No	. Parameters	Soil standards mg/kg	TNPCB	M/s. CUBE Environment
1.	Zinc as Zn	250	8.878	Laboratory 15.0
2.	Nickel as Ni	45	5.452	
3.	Cadmium as Cd	1.4	5.618	2.45
4.	Lead as Pb	70	BDL [DL:0.5]	BLQ [LOQ:1.0]
5.	Arsenic as As	12 🖟	DDL [DL.0.5]	4.69
6.	Total Chromium as Cr	64	PDI (DI -0 05)	BDL [DL:0.1]
7.	Mercury as Hg	6.6	BDL [DL:0.05]	
8.	Selenium as Se	1.0	0.16	BDL [DL:0.1]
Name	of the Location: Kamiles	1.0	-	BDL [DL:0.5]
		Soil	TNDOD	M/s. CUBE
SI.No.	Parameters	Soil standards mg/kg	TNDOD	M/s. CUBE Environment
SI.No. 1.	Parameters Zinc as Zn	Soil standards mg/kg 250	TNPCB	M/s. CUBE
SI.No. 1. 2.	Parameters Zinc as Zn Nickel as Ni	Soil standards mg/kg 250 45	TNPCB Results	M/s. CUBE Environment Laboratory
5l.No. 1. 2. 3.	Parameters Zinc as Zn Nickel as Ni Cadmium as Cd	Soil standards mg/kg 250	TNPCB Results 2.744	M/s. CUBE Environment Laboratory 10.30 1.79
5l.No. 1. 2. 3. 4.	Parameters Zinc as Zn Nickel as Ni Cadmium as Cd Lead as Pb	Soil standards mg/kg 250 45	TNPCB Results 2.744 4.596	M/s. CUBE Environment Laboratory 10.30 1.79 BLQ [LOQ:1.0]
1. 2. 3. 4. 5.	Parameters Zinc as Zn Nickel as Ni Cadmium as Cd Lead as Pb Arsenic as As	Soil standards mg/kg 250 45 1.4	TNPCB Results 2.744 4.596 6.178	M/s. CUBE Environment Laboratory 10.30 1.79 BLQ [LOQ:1.0] BLQ [LOQ:1.0]
1. 2. 3. 4. 5.	Parameters Zinc as Zn Nickel as Ni Cadmium as Cd Lead as Pb Arsenic as As Total Chromium as Cr	Soil standards mg/kg 250 45 1.4 70	TNPCB Results 2.744 4.596 6.178 BDL [DL:0.5]	M/s. CUBE Environment Laboratory 10.30 1.79 BLQ [LOQ:1.0] BLQ [LOQ:1.0] BDL [DL:0.1]
5l.No. 1. 2. 3. 4. 5. 6. 7.	Parameters Zinc as Zn Nickel as Ni Cadmium as Cd Lead as Pb Arsenic as As Total Chromium as Cr Mercury as Hg	Soil standards mg/kg 250 45 1.4 70 12	TNPCB Results 2.744 4.596 6.178	M/s. CUBE Environment Laboratory 10.30 1.79 BLQ [LOQ:1.0] BLQ [LOQ:1.0] BDL [DL:0.1] 10.6
5l.No. 1. 2. 3. 4. 5. 6. 7.	Parameters Zinc as Zn Nickel as Ni Cadmium as Cd Lead as Pb Arsenic as As Total Chromium as Cr Mercury as Hg Selenium as Se	Soil standards mg/kg 250 45 1.4 70 12 64 6.6 1.0	TNPCB Results 2.744 4.596 6.178 BDL [DL:0.5] - BDL [DL:0.05] 0.06	M/s. CUBE Environment Laboratory 10.30 1.79 BLQ [LOQ:1.0] BLQ [LOQ:1.0] BDL [DL:0.1] 10.6 BDL [DL:0.1]
5l.No. 1. 2. 3. 4. 5. 6. 7. 8.	Parameters Zinc as Zn Nickel as Ni Cadmium as Cd Lead as Pb Arsenic as As Total Chromium as Cr Mercury as Hg Selenium as Se f the Location: Karumbu	Soil standards mg/kg 250 45 1.4 70 12 64 6.6 1.0	TNPCB Results 2.744 4.596 6.178 BDL [DL:0.5] - BDL [DL:0.05] 0.06	M/s. CUBE Environment Laboratory 10.30 1.79 BLQ [LOQ:1.0] BLQ [LOQ:1.0] BDL [DL:0.1] 10.6
5l.No. 1. 2. 3. 4. 5. 6. 7. 8. ame o	Parameters Zinc as Zn Nickel as Ni Cadmium as Cd Lead as Pb Arsenic as As Total Chromium as Cr Mercury as Hg Selenium as Se f the Location: Karumbu Parameters	Soil standards mg/kg 250 45 1.4 70 12 64 6.6 1.0 IThottam Vacuus Soil standards	TNPCB Results 2.744 4.596 6.178 BDL [DL:0.5] - BDL [DL:0.05] 0.06	M/s. CUBE Environment Laboratory 10.30 1.79 BLQ [LOQ:1.0] BLQ [LOQ:1.0] BDL [DL:0.1] 10.6 BDL [DL:0.1] BDL [DL:0.5] M/s. CUBE Environment
5l.No. 1. 2. 3. 4. 5. 6. 7. 8. ame o .No.	Parameters Zinc as Zn Nickel as Ni Cadmium as Cd Lead as Pb Arsenic as As Total Chromium as Cr Mercury as Hg Selenium as Se f the Location: Karumbu Parameters Zinc as Zn	Soil standards mg/kg 250 45 1.4 70 12 64 6.6 1.0 UThottam Vacuus Soil	TNPCB Results 2.744 4.596 6.178 BDL [DL:0.5] - BDL [DL:0.05] 0.06 - dakkuvellur TNPCB Results	M/s. CUBE Environment Laboratory 10.30 1.79 BLQ [LOQ:1.0] BLQ [LOQ:1.0] BDL [DL:0.1] 10.6 BDL [DL:0.1] BDL [DL:0.5] M/s. CUBE Environment Laboratory
5l.No. 1. 2. 3. 4. 5. 6. 7. 8. ame o .No.	Parameters Zinc as Zn Nickel as Ni Cadmium as Cd Lead as Pb Arsenic as As Total Chromium as Cr Mercury as Hg Selenium as Se f the Location: Karumbu Parameters Zinc as Zn Nickel as Ni	Soil standards mg/kg 250 45 1.4 70 12 64 6.6 1.0 Thottam Vac Soil standards mg/kg	TNPCB Results 2.744 4.596 6.178 BDL [DL:0.5] - BDL [DL:0.05] 0.06 - dakkuvellur TNPCB Results 42	M/s. CUBE Environment Laboratory 10.30 1.79 BLQ [LOQ:1.0] BLQ [LOQ:1.0] BDL [DL:0.1] 10.6 BDL [DL:0.1] BDL [DL:0.5] M/s. CUBE Environment Laboratory 147
5l.No. 1. 2. 3. 4. 5. 6. 7. 8. ame o .No. 1. 2. 3.	Parameters Zinc as Zn Nickel as Ni Cadmium as Cd Lead as Pb Arsenic as As Total Chromium as Cr Mercury as Hg Selenium as Se f the Location: Karumbu Parameters Zinc as Zn	Soil standards mg/kg 250 45 1.4 70 12 64 6.6 1.0 IThottam Vacuum Soil standards mg/kg 250	TNPCB Results 2.744 4.596 6.178 BDL [DL:0.5] - BDL [DL:0.05] 0.06 - dakkuvellur TNPCB Results 42 9.318	M/s. CUBE Environment Laboratory 10.30 1.79 BLQ [LOQ:1.0] BLQ [LOQ:1.0] BDL [DL:0.1] 10.6 BDL [DL:0.1] BDL [DL:0.5] M/s. CUBE Environment Laboratory 147 14.8
5l.No. 1. 2. 3. 4. 5. 6. 7. 8. ame o .No. 1. 2. 3. 4.	Parameters Zinc as Zn Nickel as Ni Cadmium as Cd Lead as Pb Arsenic as As Total Chromium as Cr Mercury as Hg Selenium as Se f the Location: Karumbu Parameters Zinc as Zn Nickel as Ni	Soil standards mg/kg 250 45 1.4 70 12 64 6.6 1.0 IThottam Vac Soil standards mg/kg 250 45	TNPCB Results 2.744 4.596 6.178 BDL [DL:0.5] - BDL [DL:0.05] 0.06 - dakkuvellur TNPCB Results 42 9.318 8.11	M/s. CUBE Environment Laboratory 10.30 1.79 BLQ [LOQ:1.0] BLQ [LOQ:1.0] BDL [DL:0.1] 10.6 BDL [DL:0.1] BDL [DL:0.5] M/s. CUBE Environment Laboratory 147 14.8 BLQ [LOQ:1.0]
5l.No. 1. 2. 3. 4. 5. 6. 7. 8. ame o .No. 1. 2. 3. 4.	Parameters Zinc as Zn Nickel as Ni Cadmium as Cd Lead as Pb Arsenic as As Total Chromium as Cr Mercury as Hg Selenium as Se f the Location: Karumbu Parameters Zinc as Zn Nickel as Ni Cadmium as Cd	Soil standards mg/kg 250 45 1.4 70 12 64 6.6 1.0 IThottam Vac Soil standards mg/kg 250 45 1.4 70	TNPCB Results 2.744 4.596 6.178 BDL [DL:0.5] - BDL [DL:0.05] 0.06 - dakkuvellur TNPCB Results 42 9.318	M/s. CUBE Environment Laboratory 10.30 1.79 BLQ [LOQ:1.0] BLQ [LOQ:1.0] BDL [DL:0.1] 10.6 BDL [DL:0.1] BDL [DL:0.5] M/s. CUBE Environment Laboratory 147 14.8 BLQ [LOQ:1.0] 5.41
5I.No. 1. 2. 3. 4. 5. 6. 7. 8. ame o .No. 1. 2. 3. 4. 5.	Parameters Zinc as Zn Nickel as Ni Cadmium as Cd Lead as Pb Arsenic as As Total Chromium as Cr Mercury as Hg Selenium as Se f the Location: Karumbu Parameters Zinc as Zn Nickel as Ni Cadmium as Cd Lead as Pb Arsenic as As	Soil standards mg/kg 250 45 1.4 70 12 Soil standards mg/kg 250 45 1.4 70 12	TNPCB Results 2.744 4.596 6.178 BDL [DL:0.5] - BDL [DL:0.05] 0.06 - dakkuvellur TNPCB Results 42 9.318 8.11 BDL [DL:0.5] -	M/s. CUBE Environment Laboratory 10.30 1.79 BLQ [LOQ:1.0] BLQ [LOQ:1.0] BDL [DL:0.1] 10.6 BDL [DL:0.1] BDL [DL:0.5] M/s. CUBE Environment Laboratory 147 14.8 BLQ [LOQ:1.0] 5.41 BDL [DL:0.1]
5l.No. 1. 2. 3. 4. 5. 6. 7. 8. ame o .No. 1. 2. 3. 4. 5. 6.	Parameters Zinc as Zn Nickel as Ni Cadmium as Cd Lead as Pb Arsenic as As Total Chromium as Cr Mercury as Hg Selenium as Se f the Location: Karumbu Parameters Zinc as Zn Nickel as Ni Cadmium as Cd Lead as Pb Arsenic as As Total Chromium as Cr	Soil standards mg/kg 250 45 1.4 6.6 1.0 IThottam Vac Soil standards mg/kg 250 45 1.4 70 12 64 64	TNPCB Results 2.744 4.596 6.178 BDL [DL:0.5] - BDL [DL:0.05] 0.06 - dakkuvellur TNPCB Results 42 9.318 8.11 BDL [DL:0.5] - BDL [DL:0.5]	M/s. CUBE Environment Laboratory 10.30 1.79 BLQ [LOQ:1.0] BLQ [LOQ:1.0] BDL [DL:0.1] 10.6 BDL [DL:0.1] BDL [DL:0.5] M/s. CUBE Environment Laboratory 147 14.8 BLQ [LOQ:1.0] 5.41 BDL [DL:0.1] 18.4
1. 2. 3. 4. 5. 6. 7. 8. A. 5. 4. 5. 6. 7. 7. 7.	Parameters Zinc as Zn Nickel as Ni Cadmium as Cd Lead as Pb Arsenic as As Total Chromium as Cr Mercury as Hg Selenium as Se f the Location: Karumbu Parameters Zinc as Zn Nickel as Ni Cadmium as Cd Lead as Pb Arsenic as As Total Chromium as Cr Mercury as Hg	Soil standards mg/kg 250 45 1.4 70 12 64 70 12 45 1.4 70 12 64 6.6 64 6.6 64 6.6 64 6.6 64 6.6 64 6.6 64 6.6 64 6.6 66 66 66 66 66 66 66 66 66 66 66 66	TNPCB Results 2.744 4.596 6.178 BDL [DL:0.5] - BDL [DL:0.05] 0.06 - dakkuvellur TNPCB Results 42 9.318 8.11 BDL [DL:0.5] -	M/s. CUBE Environment Laboratory 10.30 1.79 BLQ [LOQ:1.0] BLQ [LOQ:1.0] BDL [DL:0.1] 10.6 BDL [DL:0.1] BDL [DL:0.5] M/s. CUBE Environment Laboratory 147 14.8 BLQ [LOQ:1.0] 5.41 BDL [DL:0.1] 18.4 BDL [DL:0.1]
5l.No. 1. 2. 3. 4. 5. 6. 7. 8. ame o .No. 1. 2. 3. 4. 5. 6. 7. 8.	Parameters Zinc as Zn Nickel as Ni Cadmium as Cd Lead as Pb Arsenic as As Total Chromium as Cr Mercury as Hg Selenium as Se f the Location: Karumbu Parameters Zinc as Zn Nickel as Ni Cadmium as Cd Lead as Pb Arsenic as As Total Chromium as Cr Mercury as Hg Selenium as Cd	Soil standards mg/kg 250 45 1.4 70 12 64 70 12 501 standards mg/kg 250 45 1.4 70 12 64 6.6 1.0 12 64 6.6 1.0 12 64 6.6 1.0 10 10 10 10 10 10 10 10 10 10 10 10 10	TNPCB Results 2.744 4.596 6.178 BDL [DL:0.5] - BDL [DL:0.05] 0.06 - dakkuvellur TNPCB Results 42 9.318 8.11 BDL [DL:0.5] - BDL [DL:0.5]	M/s. CUBE Environment Laboratory 10.30 1.79 BLQ [LOQ:1.0] BLQ [LOQ:1.0] BDL [DL:0.1] 10.6 BDL [DL:0.1] BDL [DL:0.5] M/s. CUBE Environment Laboratory 147 14.8 BLQ [LOQ:1.0] 5.41 BDL [DL:0.1] 18.4
1. 2. 3. 4. 5. 6. 7. 8. 4. 5. 6. 7. 8. 8. 6. 7. 8. 8. 8. 8. 8. 8. 8. 8. 8. 8. 8. 8. 8.	Parameters Zinc as Zn Nickel as Ni Cadmium as Cd Lead as Pb Arsenic as As Total Chromium as Cr Mercury as Hg Selenium as Se f the Location: Karumbu Parameters Zinc as Zn Nickel as Ni Cadmium as Cd Lead as Pb Arsenic as As Total Chromium as Cr Mercury as Hg Selenium as Cd Lead as Pb Arsenic as As Total Chromium as Cr Mercury as Hg Selenium as Se the Location: Vadakkuy	Soil standards mg/kg 250 45 1.4 70 12 64 70 12 64 6.6 1.0 12 64 6.0 12 64	TNPCB Results 2.744 4.596 6.178 BDL [DL:0.5] - BDL [DL:0.05] 0.06 - dakkuvellur TNPCB Results 42 9.318 8.11 BDL [DL:0.5] - BDL [DL:0.5] - BDL [DL:0.5]	M/s. CUBE Environment Laboratory 10.30 1.79 BLQ [LOQ:1.0] BLQ [LOQ:1.0] BDL [DL:0.1] 10.6 BDL [DL:0.1] BDL [DL:0.5] M/s. CUBE Environment Laboratory 147 14.8 BLQ [LOQ:1.0] 5.41 BDL [DL:0.1] 18.4 BDL [DL:0.5]
1. 2. 3. 4. 5. 6. 7. 8. 4. 5. 6. 7. 8. 8. 6. 7. 8. 8. 8. 8. 8. 8. 8. 8. 8. 8. 8. 8. 8.	Parameters Zinc as Zn Nickel as Ni Cadmium as Cd Lead as Pb Arsenic as As Total Chromium as Cr Mercury as Hg Selenium as Se f the Location: Karumbu Parameters Zinc as Zn Nickel as Ni Cadmium as Cd Lead as Pb Arsenic as As Total Chromium as Cr Mercury as Hg Selenium as Cd	Soil standards mg/kg 250 45 1.4 70 12 64 6.6 1.0 12 64 70 12 64 6.6 1.0 12 64 6.6 1.0 12 64 6.6 1.0 rellur by pass Soil standards mg/kg 250	TNPCB Results 2.744 4.596 6.178 BDL [DL:0.5] - BDL [DL:0.05] 0.06 - dakkuvellur TNPCB Results 42 9.318 8.11 BDL [DL:0.5] - BDL [DL:0.5]	M/s. CUBE Environment Laboratory 10.30 1.79 BLQ [LOQ:1.0] BLQ [LOQ:1.0] BDL [DL:0.1] 10.6 BDL [DL:0.1] BDL [DL:0.5] M/s. CUBE Environment Laboratory 147 14.8 BLQ [LOQ:1.0] 5.41 BDL [DL:0.1] 18.4 BDL [DL:0.1]

2.	Nickel as Ni	45	9.92	18.4
		1.32	6.298	BLQ [LOQ:1.0]
3.	Cadmium as Cd		BDL [DL:0.5]	6.18
4.	Lead as Pb	70	BDL [DL.0.0]	
5.	Arsenic as As	12		BDL [DL:0.1]
6.	Total Chromium as Cr	64	BDL [DL:0.5]	19.2
7.	Mercury as Hg	6.6	0.065	BDL [DL:0.1]
8.	Selenium as Se	1.0		BDL [DL:0.5]
	of the Location: Pallitheru	Vadakku Ve	ellore (ash)	
SI.No.	Parameters	Soil	TNPCB	M/s. CUBE
		standards	Results	Environment
		mg/kg		Laboratory
1.	Zinc as Zn	250	11.528	22.9
2.	Nickel as Ni	45	7.274	8.89
3.	Cadmium as Cd	1.4	2.958	BLQ [LOQ:1.0]
4.	Lead as Pb	70	BDL [DL:0.5]	5.23
5.	Arsenic as As	12	-	BDL [DL:0.1]
6.	Total Chromium as Cr	64	BDL [DL:0.5]	14.8
		6.6	0.18	BDL [DL:0.1]
7.	Mercury as Hg		0.10	BDL [DL:0.5]
8.	Selenium as Se	1.0		[טב.ט.ט]

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

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

Original Application No.107 of 2023 (SZ)
I.A. No. 151 of 2024 (SZ)
WITH
Original Application No. 24 of 2024 (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.

With

News Item in South First Dt. 19.09.2023 titled "Wages of mining Neyveli turns ashtray, leaving farmers with broken promises and uncertain future"

Vs

CPCB & ors

...Respondents

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

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

Date:17.02.2025.

Date of hearing on:17.02.2025.