

BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL

SOUTHERN ZONE, CHENNAI.

Original Application No.06 of 2021

Tribunal on its own motion-SUO MOTU
Based on The News item in the Hindu
Newspaper Edition Dated: 21.12.2020,
"Villnjiyambakkam Lake shrunk due to Encroachment,"

Vs

The Principal Secretary to Government,
Public Works Department,
Govt. Secretariat, Fort St. George,
Chennai, Tamil Nadu and others.

...Respondents

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

**BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL
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The Principal Secretary to Government,
Public Works Department,
Govt. Secretariat, Fort St. George,
Chennai, Tamil Nadu and others.

...Respondents

**REPORT FILED ON BEHALF OF THE 4TH RESPONDENT
TAMIL NADU POLLUTION CONTROL BOARD.**

I, R. Rajamanickam, S/o. P.M.Ramasamy, Hindu, aged about 58 years, having office at No.76, Mount Salai, Guindy, Chennai-600 032, do hereby solemnly affirm and sincerely state as follows:-

1. I am the Additional Chief Environmental Engineer, Tamil Nadu Pollution Control Board and I am filing this Report on behalf of the 4th Respondents Board and as such I am well acquainted with the facts of the case as per records.
2. It is respectfully submitted that this Hon'ble Tribunal in its Order dated 01.09.2022 in O.A. No. 06 of 2021 directed inter alia as follows:

"1. The Pollution Control Board has filed a report dated 20.03.2022 in which they have enlisted the short term and long term plans for compliance of the recommendations of the Joint Committee report pertaining to the Avadi Municipal Corporation.

2. The Corporation has sought time till 31.07.2022 to comply with the short term plan. Whether the same has been complied with or not has to be inspected by the Pollution Control Board afresh and file a report for which purpose the matter may be listed again on 11.10.2022".

3. It is respectfully submitted that this Hon'ble Tribunal further directed vide order dated 11.11.2022 as follows:


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“2. It is stated that the inspection by the State Pollution Control Board is complete and only the report is awaited. Be that as it may, it is now stated that few lakes are coming within the purview of the Avadi City Municipal Corporation which are left unattended and had shrunk like the one in question namely, Vilinjiyambakkam Lake.

4. The State Pollution Control Board also may get the list of lakes within the Avadi City Municipal Corporation coming under the purview of the Water Resources Department (WRD) and test the water samples to find out if there are any pollutants. In the event, the pollutants are identified, they are also directed to take appropriate action and report to this Tribunal.”

4. It is respectfully submitted that in due compliance with the orders dated 01.09.2022, 11.10.2022, 02.11.2022 & 11.11.2022 by this Hon'ble Tribunal, the Vilinjiyambakkam Lake area was inspected on 10.11.2022, 28.12.2022 and 13.04.2023. During the inspections, the following were observed:

- a. During inspection, the sewage/sullage flows through open drains confluence into Vilinjiyambakkam lake from the areas of Bharathidasan Nagar, Sri Devi Nagar, Foreshore encroachment areas of Vilinjiyambakkam Lake and from the residential areas in the vicinity of Sekkadu lake surplus feeding channel and on either side of residential areas of Govindhanthangal lake surplus feeding channel (Kavarappalayam) leading to Vilinjiyambakkam Lake. The above said area falls under the jurisdiction of Avadi City Municipal Corporation.
- b. The Avadi City Municipal Corporation has not implemented full-fledged Under Ground Sewerage System (UGSS) for the above said areas.
- c. During inspection it was noticed that there was no solid waste dumping within the Vilinjiyambakkam Lake boundary.
- d. No industrial estates/Industries are located in the vicinity all along the Vilinjiyambakkam lake boundary. During inspection it


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was noticed that there was no discharge of industrial trade effluent into the Vilinjiyambakkam Lake.

5. It is respectfully submitted that the ROA of two lake water sample and two sediment soil samples collected in Vilinjiyambakkam Lake in different locations and the report of analysis as per inspection dated 28.12.2022 is illustrated in the following table and the results and discussions on the ROA of lake water sample & sediment soil sample is submitted as follows:

Characteristics of Lake water samples collected in Vilinjiyambakkam Lake				Date of Sample Collection 28.12.2022	
Sl. No	Parameters	Units	Outdoor bathing standards	VL01/12	VL02/12
				1	2
1	pH	-	6.5 to 8.5	7.81	7.69
2	Conductivity	microS/cm	-	839	808
3	Total Suspended Solids	mg/l	-	36	32
4	Total Dissolved Solids	mg/l	-	524	516
5	Chlorides	mg/l	-	116	112
6	Sulphates	mg/l	-	37	17
7	BOD at 27oC for 3 days	mg/l	3mg/l or less	6	5
8	COD	mg/l	-	56	48
9	Zinc	mg/l	-	0.086	0.086
10	Copper	mg/l	-	0.052	0.058
11	Cadmium	mg/l	-	<0.013	<0.013
12	Lead	mg/l	-	<0.07	<0.07
13	Nickel	mg/l	-	<0.05	<0.05
14	Total Chromium	mg/l	-	<0.05	<0.05
15	Hexavalent Chromium	mg/l	-	<0.05	<0.05
16	Boron	mg/l	-	FNA	FNA
17	Dissolved Oxygen	mg/l	5mg/l or more	5.5	4.5
18	Sodium Adsorption Ratio	mg/l	-	3.2	2.9
19	Percentage Sodium	mg/l	-	57	53
20	Total Coliform	MPN/100ml	-	200	700
21	Fecal Coliform	MPN/100ml	500 MPN/100ml (desirable) and 2500 MPN/100ml (maximum permissible)	<1.8	61

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The analysis results of the Vilinjiyambakkam Lake water samples collected on 28.12.2022 at various locations for the following parameters ranges as below:

pH – 7.69 to 7.81, TSS(mg/l) – 32 to 36, BOD(mg/l) – 5 to 6, Fecal Coliform (MPN/100ml) - <1.8 to 61, Total Coliform (MPN/100ml) - 200 to 700

The above result of analysis of Lake water sample indicates that the lake pollution is due to mixing of untreated sewage/sullage from the nearby residential areas.

6. It is respectfully submitted that the ROA of the two sediment soil samples collected in Vilinjiyambakkam Lake in different locations and the report of analysis is illustrated in the following table and the results and discussions on the ROA of sediment soil sample is submitted as follows:

Characteristics of sediment soil samples collected in Vilinjiyambakkam Lake					
Sl. No	Parameters	Units	Screening levels (Agricultural) mg/kg	Date of Sample Collection	
				26.07.2021	
				VL01B/12	VL02B/12
				1	2
1	pH (50% solution)	-	6 to 8	7.79	5.71
2	Conductivity	microS/cm	-	722	432
3	Chlorides	mg/kg	-	39	25
4	Sulphates	mg/kg	-	126	23
5	Nitrate Nitrogen	mg/kg	-	1.135	1.025
6	Nitrite Nitrogen	mg/kg	-	<1	<1
7	Total Kjeldhal Nitrogen	mg/kg	-	<2	<2
8	Calcium	mg/kg	-	19	16
9	Magnesium	mg/kg	-	5	6
10	Sodium	mg/kg	-	83	62
11	Potassium	mg/kg	-	12	10
12	Total Phosphate	mg/kg	-	<0.5	<0.5
13	Zinc	mg/kg	200	2.284	1.434
14	Copper	mg/kg	63	3.624	1.373
15	Cadmium	mg/kg	1.4	3.721	3.742
16	Lead	mg/kg	70	1.245	1.165
17	Nickel	mg/kg	50	<0.05	<0.05
18	Total Chromium	mg/kg	64	<0.05	<0.05
19	Manganese	mg/kg	-	3.426	1.462
20	Total Iron	mg/kg	-	0.948	0.982
21	Phenolic compounds	mg/kg	-	2.412	1.112
22	Cesium	mg/kg	-	FNA	FNA
23	Sodium Adsorption Ratio	meq/i	5	4.4	3.4


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Screening levels are important to assess the level of contamination. The MoEF vide "Guidance document for assessment and remediation of contaminated sites in India" Volume-II – Standards and Checklists illustrated the following.

Screening levels: Screening levels are generic concentrations of hazardous substances in soil and sediments, groundwater and surface water at or below which potential risks to human health or the environment are not likely to occur and where no further investigation and assessment is needed. These Screening levels are distinguished for land use.

From the above results, it is found that the sediments samples collected at various locations inside Vilijiyambakkam Lake contains heavy metals such as Zinc, Copper, Cadmium, Lead, Nickel & Total Chromium which is compared with the screening levels (Agricultural) prescribed by the MoEF vide "Guidance document for assessment and remediation of contaminated sites in India" Volume-II – Standards and Checklists, which reveals that except Cadmium (3.721 mg/kg to 3.742 mg/kg) in two sample the remaining heavy metals are within the screening level prescribed by the MoEF.

Ambattur Lake:

In due compliance of the Hon'ble NGT Order dated 11.11.2022 in O.A. No. 06 of 2021, the Ambattur Lake area was inspected & sample collected on 29.12.2022. I submit herewith the ROA of lake water sample and sediment soil samples collected in Ambattur Lake and the report of analysis is illustrated in the following table and the results and discussions on the ROA of lake water sample & sediment soil sample is submitted as follows:

Characteristics of Lake water samples collected in Ambattur Lake				Date of Sample Collection
Sl. No	Parameters	Units	Outdoor bathing standards	29.12.2022
				AML-01/12
				1
1	pH	-	6.5 to 8.5	7.41
2	Conductivity	microS/cm	-	1071
3	Total Suspended Solids	mg/l	-	18
4	Total Dissolved Solids	mg/l	-	662
5	Chlorides	mg/l	-	176
6	Sulphates	mg/l	-	110
7	BOD at 27°C for 3 days	mg/l	3mg/l or less	5
8	COD	mg/l	-	48
9	Zinc	mg/l	-	0.076

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10	Copper	mg/l	-	0.062
11	Cadmium	mg/l	-	<0.013
12	Lead	mg/l	-	<0.07
13	Nickel	mg/l	-	<0.05
14	Total Chromium	mg/l	-	<0.05
15	Hexavalent Chromium	mg/l	-	<0.05
16	Boron	mg/l	-	FNA
17	Dissolved Oxygen	mg/l	5mg/l or more	4.2
18	Sodium Adsorption Ratio	mg/l	-	3.86
19	Percentage Sodium	mg/l	-	57
20	Total Coliform	MPN/100ml	-	460
21	Fecal Coliform	MPN/100ml	500 MPN/100ml (desirable) and 2500 MPN/100ml (maximum permissible)	40

The analysis results of the Ambattur Lake water samples collected on 28.12.2022 at various locations for the following parameters ranges as below:
pH – 7.41, TSS(mg/l) – 18, BOD(mg/l) – 5, Fecal Coliform (MPN/100ml) - 40, Total Coliform (MPN/100ml) - 460

The above result of analysis of Lake water sample indicates that the lake pollution is due to mixing of untreated sewage/sullage from the nearby residential areas.

In due compliance of the Hon'ble NGT Order dated 11.11.2022 in O.A. No. 06 of 2021, the Ambattur Lake area was inspected & sample collected on 29.12.2022. I submit herewith the ROA of sediment soil samples collected in Ambattur Lake and the report of analysis is illustrated in the following table and the results and discussions on the ROA of sediment soil sample is submitted as follows:

Characteristics of sediment soil samples collected in Ambattur Lake				
Sl. No	Parameters	Units	Screening levels (Agricultural) mg/kg	Date of Sample Collection
				29.12.2022
				AML01B/12
				1
1	pH (50% solution)	-	6 to 8	5.62
2	Conductivity	microS/cm	-	1422
3	Chlorides	mg/kg	-	25
4	Sulphates	mg/kg	-	396
5	Nitrate Nitrogen	mg/kg	-	1.372
6	Nitrite Nitrogen	mg/kg	-	<1
7	Total Kjeldhal Nitrogen	mg/kg	-	<2
8	Calcium	mg/kg	-	36

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9	Magnesium	mg/kg	-	19
10	Sodium	mg/kg	-	135
11	Potassium	mg/kg	-	11
12	Total Phosphate	mg/kg	-	<0.5
13	Zinc	mg/kg	200	2.863
14	Copper	mg/kg	63	2.135
15	Cadmium	mg/kg	1.4	6.342
16	Lead	mg/kg	70	3.893
17	Nickel	mg/kg	50	<0.05
18	Total Chromium	mg/kg	64	<0.05
19	Manganese	mg/kg	-	3.472
20	Total Iron	mg/kg	-	2.682
21	Phenolic compounds	mg/kg	-	1.068
22	Cesium	mg/kg	-	FNA
23	Sodium Adsorption Ratio	meq/i	5	4.1

Screening levels are important to assess the level of contamination. The MoEF vide "Guidance document for assessment and remediation of contaminated sites in India" Volume-II – Standards and Checklists illustrated the following.

Screening levels: Screening levels are generic concentrations of hazardous substances in soil and sediments, groundwater and surface water at or below which potential risks to human health or the environment are not likely to occur and where no further investigation and assessment is needed. These Screening levels are distinguished for land use.

From the above results, it is found that the sediments samples collected at various locations inside Ambattur Lake contains heavy metals such as Zinc, Copper, Cadmium, Lead, Nickel & Total Chromium which is compared with the screening levels (Agricultural) prescribed by the MoEF vide "Guidance document for assessment and remediation of contaminated sites in India" Volume-II – Standards and Checklists, which reveals that except Cadmium (6.342 mg/kg) and the remaining heavy metals are within the screening level prescribed by the MoEF.

Arafath Lake:

In due compliance of the Hon'ble NGT Order dated 11.11.2022 in O.A. No. 06 of 2021, the Arafath Lake area was inspected & sample collected on 29.12.2022. I submit herewith the ROA of lake water sample and sediment soil samples collected in Arafath Lake and the report of analysis is illustrated in the

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following table and the results and discussions on the ROA of lake water sample & sediment soil sample is submitted as follows:

Characteristics of Lake water samples collected in Arafath Lake				Date of Sample Collection
Sl. No	Parameters	Units	Outdoor bathing standards	
				29.12.2022
				AF-01/12
				1
1	pH	-	6.5 to 8.5	7.15
2	Conductivity	microS/cm	-	1239
3	Total Suspended Solids	mg/l	-	22
4	Total Dissolved Solids	mg/l	-	768
5	Chlorides	mg/l	-	230
6	Sulphates	mg/l	-	169
7	BOD at 27oC for 3 days	mg/l	3mg/l or less	6
8	COD	mg/l	-	56
9	Zinc	mg/l	-	0.068
10	Copper	mg/l	-	0.042
11	Cadmium	mg/l	-	<0.013
12	Lead	mg/l	-	<0.07
13	Nickel	mg/l	-	<0.05
14	Total Chromium	mg/l	-	<0.05
15	Hexavalent Chromium	mg/l	-	<0.05
16	Boron	mg/l	-	FNA
17	Dissolved Oxygen	mg/l	5mg/l or more	6.1
18	Sodium Adsorption Ratio	mg/l	-	4.58
19	Percentage Sodium	mg/l	-	59
20	Total Coliform	MPN/100ml	-	310
21	Fecal Coliform	MPN/100ml	500 MPN/100ml (desirable) and 2500 MPN/100ml (maximum permissible)	<1.8

The analysis results of the Arafath Lake water samples collected on 29.12.2022 at various locations for the following parameters are as below:

pH – 7.15, TSS(mg/l) – 22, BOD(mg/l) – 6, Fecal Coliform (MPN/100ml) - <1.8, Total Coliform (MPN/100ml) - 310

The above result of analysis of Lake water sample indicates that the lake pollution is due to mixing of untreated sewage/sullage from the nearby residential areas.

In due compliance of the Hon'ble NGT Order dated 11.11.2022 in O.A. No. 06 of 2021, the Arafath Lake area was inspected & sample collected on 29.12.2022. I submit herewith the ROA of sediment soil samples collected in Arafath Lake and the report of analysis is illustrated in the following table and


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the results and discussions on the ROA of sediment soil sample is submitted as follows:

Characteristics of sediment soil samples collected in Arafath Lake				
Sl. No	Parameters	Units	Screening levels (Agricultural) mg/kg	Date of Sample Collection
				29.12.2022
				AF01B/12
				1
1	pH (50% solution)	-	6 to 8	7.32
2	Conductivity	microS/cm	-	1338
3	Chlorides	mg/kg	-	48
4	Sulphates	mg/kg	-	339
5	Nitrate Nitrogen	mg/kg	-	1.118
6	Nitrite Nitrogen	mg/kg	-	<1
7	Total Kjeldhal Nitrogen	mg/kg	-	<2
8	Calcium	mg/kg	-	40
9	Magnesium	mg/kg	-	24
10	Sodium	mg/kg	-	90
11	Potassium	mg/kg	-	15
12	Total Phosphate	mg/kg	-	<0.5
13	Zinc	mg/kg	200	4.126
14	Copper	mg/kg	63	2.05
15	Cadmium	mg/kg	1.4	3.412
16	Lead	mg/kg	70	0.251
17	Nickel	mg/kg	50	<0.05
18	Total Chromium	mg/kg	64	<0.05
19	Manganese	mg/kg	-	3.472
20	Total Iron	mg/kg	-	1.748
21	Phenolic compounds	mg/kg	-	1.012
22	Cesium	mg/kg	-	FNA
23	Sodium Adsorption Ratio	meq/i	5	2.96

Screening levels are important to assess the level of contamination. The MoEF vide "Guidance document for assessment and remediation of contaminated sites in India" Volume-II – Standards and Checklists illustrated the following.

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From the above results, it is found that the sediments samples collected at various locations inside Arafath Lake contains heavy metals such as Zinc, Copper, Cadmium, Lead, Nickel & Total Chromium which is compared with the


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screening levels (Agricultural) prescribed by the MoEF vide "Guidance document for assessment and remediation of contaminated sites in India" Volume-II – Standards and Checklists, which reveals that except Cadmium (3.412 mg/kg) and the remaining heavy metals are within the screening level prescribed by the MoEF.

Puzhal Lake:

In due compliance of the Hon'ble NGT Order dated 11.11.2022 in O.A. No. 06 of 2021, the Puzhal Lake area was inspected & sample collected on 29.12.2022. I submit herewith the ROA of lake water sample and sediment soil samples collected in Puzhal Lake and the report of analysis is illustrated in the following table and the results and discussions on the ROA of lake water sample & sediment soil sample is submitted as follows:

Characteristics of Lake water samples collected in Puzhal Lake				
Sl. No	Parameters	Units	Outdoor bathing standards	Date of Sample Collection
				29.12.2022
				POL-01/12
				1
1	pH	-	6.5 to 8.5	7.81
2	Conductivity	microS/cm	-	640
3	Total Suspended Solids	mg/l	-	16
4	Total Dissolved Solids	mg/l	-	392
5	Chlorides	mg/l	-	92
6	Sulphates	mg/l	-	58
7	BOD at 27oC for 3 days	mg/l	3mg/l or less	5
8	COD	mg/l	-	48
9	Zinc	mg/l	-	1.638
10	Copper	mg/l	-	1.054
11	Cadmium	mg/l	-	4.532
12	Lead	mg/l	-	1.251
13	Nickel	mg/l	-	<0.05
14	Total Chromium	mg/l	-	<0.05
15	Hexavalent Chromium	mg/l	-	<0.05
16	Boron	mg/l	-	FNA
17	Dissolved Oxygen	mg/l	5mg/l or more	4.9
18	Sodium Adsorption Ratio	mg/l	-	2.62
19	Percentage Sodium	mg/l	-	53
20	Total Coliform	MPN/100ml	-	400
21	Fecal Coliform	MPN/100ml	500 MPN/100ml (desirable) and 2500 MPN/100ml (maximum permissible)	<1.8


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The analysis results of the Puzhal Lake water samples collected on 29.12.2022 at various locations for the following parameters are as below:

pH – 7.81, TSS(mg/l) – 16, BOD(mg/l) – 5, Fecal Coliform (MPN/100ml) - <1.8, Total Coliform (MPN/100ml) - 400

The above result of analysis of Lake water sample indicates that the lake pollution is due to mixing of untreated sewage/sullage from the nearby residential areas.

In due compliance of the Hon'ble NGT Order dated 11.11.2022 in O.A. No. 06 of 2021, the Puzhal Lake area was inspected & sample collected on 29.12.2022. I submit herewith the ROA of sediment soil samples collected in Puzhal Lake and the report of analysis is illustrated in the following table and the results and discussions on the ROA of sediment soil sample is submitted as follows:

Characteristics of sediment soil samples collected in Puzhal Lake				
Sl. No	Parameters	Units	Screening levels (Agricultural) mg/kg	Date of Sample Collection
				29.12.2022 PUL01B/12
				1
1	pH (50% solution)	-	6 to 8	7.19
2	Conductivity	microS/cm	-	1242
3	Chlorides	mg/kg	-	25
4	Sulphates	mg/kg	-	358
5	Nitrate Nitrogen	mg/kg	-	1.562
6	Nitrite Nitrogen	mg/kg	-	<1
7	Total Kjeldhal Nitrogen	mg/kg	-	<2
8	Calcium	mg/kg	-	48
9	Magnesium	mg/kg	-	12
10	Sodium	mg/kg	-	141
11	Potassium	mg/kg	-	7.5
12	Total Phosphate	mg/kg	-	<0.5
13	Zinc	mg/kg	200	3.231
14	Copper	mg/kg	63	1.824
15	Cadmium	mg/kg	1.4	5.142
16	Lead	mg/kg	70	1.762
17	Nickel	mg/kg	50	0.962
18	Total Chromium	mg/kg	64	<0.05
19	Manganese	mg/kg	-	4.342
20	Total Iron	mg/kg	-	2.116
21	Phenolic compounds	mg/kg	-	1.092
22	Cesium	mg/kg	-	FNA
23	Sodium Adsorption Ratio	meq/i	5	4.75

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Screening levels are important to assess the level of contamination. The MoEF vide "Guidance document for assessment and remediation of contaminated sites in India" Volume-II – Standards and Checklists illustrated the following.

Screening levels: Screening levels are generic concentrations of hazardous substances in soil and sediments, groundwater and surface water at or below which potential risks to human health or the environment are not likely to occur and where no further investigation and assessment is needed. These Screening levels are distinguished for land use.

From the above results, it is found that the sediments samples collected at various locations inside Puzhal Lake contains heavy metals such as Zinc, Copper, Cadmium, Lead, Nickel & Total Chromium which is compared with the screening levels (Agricultural) prescribed by the MoEF vide "Guidance document for assessment and remediation of contaminated sites in India" Volume-II – Standards and Checklists, which reveals that except Cadmium (5.142 mg/kg) and the remaining heavy metals are within the screening level prescribed by the MoEF.

Muthapudhupet Lake:

In due compliance of the Hon'ble NGT Order dated 11.11.2022 in O.A. No. 06 of 2021, the Muthapudhupet Lake area was inspected & sample collected on 29.12.2022. I submit herewith the ROA of lake water sample and sediment soil samples collected in Muthapudhupet Lake and the report of analysis is illustrated in the following table and the results and discussions on the ROA of lake water sample & sediment soil sample is submitted as follows:

Characteristics of Lake water samples collected in Muthapudhupet Lake				
Sl. No	Parameters	Units	Outdoor bathing standards	Date of Sample Collection
				29.12.2022
				MPT-01/12
				1
1	pH	-	6.5 to 8.5	7.48
2	Conductivity	microS/cm	-	991
3	Total Suspended Solids	mg/l	-	72
4	Total Dissolved Solids	mg/l	-	618
5	Chlorides	mg/l	-	122

R. Jindal 27/12/2022
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6	Sulphates	mg/l	-	87
7	BOD at 27°C for 3 days	mg/l	3mg/l or less	6
8	COD	mg/l	-	56
9	Zinc	mg/l	-	0.262
10	Copper	mg/l	-	0.424
11	Cadmium	mg/l	-	0.712
12	Lead	mg/l	-	0.658
13	Nickel	mg/l	-	<0.05
14	Total Chromium	mg/l	-	<0.05
15	Hexavalent Chromium	mg/l	-	<0.05
16	Boron	mg/l	-	FNA
17	Dissolved Oxygen	mg/l	5mg/l or more	5.9
18	Sodium Adsorption Ratio	mg/l	-	2.74
19	Percentage Sodium	mg/l	-	48
20	Total Coliform	MPN/100ml	-	200
21	Fecal Coliform	MPN/100ml	500 MPN/100ml (desirable) and 2500 MPN/100ml (maximum permissible)	<1.8

The analysis results of the Muthapudhupet Lake water samples collected on 29.12.2022 at various locations for the following parameters are as below: pH – 7.48, TSS(mg/l) – 72, BOD(mg/l) – 6, Fecal Coliform (MPN/100ml) - <1.8, Total Coliform (MPN/100ml) - 200

The above result of analysis of Lake water sample indicates that the lake pollution is due to mixing of untreated sewage/sullage from the nearby residential areas.

In due compliance of the Hon'ble NGT Order dated 11.11.2022 in O.A. No. 06 of 2021, the Muthapudhupet Lake area was inspected & sample collected on 29.12.2022. I submit herewith the ROA of sediment soil samples collected in Muthapudhupet Lake and the report of analysis is illustrated in the following table and the results and discussions on the ROA of sediment soil sample is submitted as follows:

Characteristics of sediment soil samples collected in Muthapudhupet Lake				
Sl. No	Parameters	Units	Screening levels (Agricultural) mg/kg	Date of Sample Collection
				29.12.2022
				MPT01B/12
				1
1	pH (50% solution)	-	6 to 8	6.94

P. Jeyaraj 27/12/22
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2	Conductivity	microS/cm	-	753
3	Chlorides	mg/kg	-	71
4	Sulphates	mg/kg	-	163
5	Nitrate Nitrogen	mg/kg	-	1.217
6	Nitrite Nitrogen	mg/kg	-	<1
7	Total Kjeldhal Nitrogen	mg/kg	-	<2
8	Calcium	mg/kg	-	64
9	Magnesium	mg/kg	-	19
10	Sodium	mg/kg	-	83
11	Potassium	mg/kg	-	25
12	Total Phosphate	mg/kg	-	<0.5
13	Zinc	mg/kg	200	2.268
14	Copper	mg/kg	63	2.087
15	Cadmium	mg/kg	1.4	5.412
16	Lead	mg/kg	70	2.248
17	Nickel	mg/kg	50	<0.05
18	Total Chromium	mg/kg	64	<0.05
19	Manganese	mg/kg	-	3.112
20	Total Iron	mg/kg	-	2.114
21	Phenolic compounds	mg/kg	-	2.012
22	Cesium	mg/kg	-	FNA
23	Sodium Adsorption Ratio	meq/i	5	3.45

Screening levels are important to assess the level of contamination. The MoEF vide "Guidance document for assessment and remediation of contaminated sites in India" Volume-II – Standards and Checklists illustrated the following.

Screening levels: Screening levels are generic concentrations of hazardous substances in soil and sediments, groundwater and surface water at or below which potential risks to human health or the environment are not likely to occur and where no further investigation and assessment is needed. These Screening levels are distinguished for land use.

From the above results, it is found that the sediments samples collected at various locations inside Muthapudhupet Lake contains heavy metals such as Zinc, Copper, Cadmium, Lead, Nickel & Total Chromium which is compared with the screening levels (Agricultural) prescribed by the MoEF vide "Guidance document for assessment and remediation of contaminated sites in India" Volume-II – Standards and Checklists, which reveals that except Cadmium (5.412 mg/kg) and the remaining heavy metals are within the screening level prescribed by the MoEF.

Paruthipattu Lake:


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In due compliance of the Hon'ble NGT Order dated 11.11.2022 in O.A. No. 06 of 2021, the Paruthipattu Lake area was inspected & sample collected on 29.12.2022. I submit herewith the ROA of lake water sample and sediment soil samples collected in Paruthipattu Lake and the report of analysis is illustrated in the following table and the results and discussions on the ROA of lake water sample & sediment soil sample is submitted as follows:

Characteristics of Lake water samples collected in Paruthipattu Lake				
Sl. No	Parameters	Units	Outdoor bathing standards	Date of Sample Collection
				29.12.2022
				PPT-01/12
				1
1	pH	-	6.5 to 8.5	7.70
2	Conductivity	microS/cm	-	970
3	Total Suspended Solids	mg/l	-	18
4	Total Dissolved Solids	mg/l	-	604
5	Chlorides	mg/l	-	157
6	Sulphates	mg/l	-	58
7	BOD at 27oC for 3 days	mg/l	3mg/l or less	4
8	COD	mg/l	-	40
9	Zinc	mg/l	-	0.711
10	Copper	mg/l	-	0.626
11	Cadmium	mg/l	-	0.342
12	Lead	mg/l	-	0.677
13	Nickel	mg/l	-	<0.05
14	Total Chromium	mg/l	-	<0.05
15	Hexavalent Chromium	mg/l	-	<0.05
16	Boron	mg/l	-	FNA
17	Dissolved Oxygen	mg/l	5mg/l or more	5.3
18	Sodium Adsorption Ratio	mg/l	-	3.56
19	Percentage Sodium	mg/l	-	56
20	Total Coliform	MPN/100ml	-	330
21	Fecal Coliform	MPN/100ml	500 MPN/100ml (desirable) and 2500 MPN/100ml (maximum permissible)	<1.8

The analysis results of the Paruthipattu Lake water samples collected on 29.12.2022 at various locations for the following parameters are as below:

pH – 7.70, TSS(mg/l) – 18, BOD(mg/l) – 4, Fecal Coliform (MPN/100ml) - <1.8, Total Coliform (MPN/100ml) - 330



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The above result of analysis of Lake water sample indicates that the lake pollution is due to mixing of untreated sewage/sullage from the nearby residential areas.

In due compliance of the Hon'ble NGT Order dated 11.11.2022 in O.A. No. 06 of 2021, the Paruthipattu Lake area was inspected & sample collected on 29.12.2022. I submit herewith the ROA of sediment soil samples collected in Paruthipattu Lake and the report of analysis is illustrated in the following table and the results and discussions on the ROA of sediment soil sample is submitted as follows:

Characteristics of sediment soil samples collected in Paruthipattu Lake				
Sl. No	Parameters	Units	Screening levels (Agricultural) mg/kg	Date of Sample Collection
				29.12.2022
				PPT01B/12
				1
1	pH (50% solution)	-	6 to 8	7.67
2	Conductivity	microS/cm	-	970
3	Chlorides	mg/kg	-	46
4	Sulphates	mg/kg	-	263
5	Nitrate Nitrogen	mg/kg	-	1.156
6	Nitrite Nitrogen	mg/kg	-	<1
7	Total Kjeldhal Nitrogen	mg/kg	-	<2
8	Calcium	mg/kg	-	48
9	Magnesium	mg/kg	-	10
10	Sodium	mg/kg	-	91
11	Potassium	mg/kg	-	13
12	Total Phosphate	mg/kg	-	<0.5
13	Zinc	mg/kg	200	5.424
14	Copper	mg/kg	63	1.545
15	Cadmium	mg/kg	1.4	7.126
16	Lead	mg/kg	70	3.482
17	Nickel	mg/kg	50	1.728
18	Total Chromium	mg/kg	64	<0.05
19	Manganese	mg/kg	-	3.112
20	Total Iron	mg/kg	-	1.482
21	Phenolic compounds	mg/kg	-	2.221
22	Cesium	mg/kg	-	FNA
23	Sodium Adsorption Ratio	meq/i	5	3.54

Screening levels are important to assess the level of contamination. The MoEF vide "Guidance document for assessment and remediation of contaminated sites in India" Volume-II – Standards and Checklists illustrated the following.


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7. It is respectfully submitted that the status of Compliance regarding discharge of Sewage/Sullage into the Vilingiyambakkam Lake remains the same.

Status on compliance on the recommendation of the Joint Committee report Pertaining to the Avadi City Municipal Corporation			
SHORT TERM PLAN			
S. No.	DESCRIPTION OF WORK	DEPARTMENT	ACTION TAKEN
1.	Providing connections of UGSS to all House hold in the Bharathidasan nagar and Sridevi nagar in Avadi City Municipal Corporation.	Commissioner, Avadi City Municipal Corporation	<p>The Commissioner, Avadi City Municipal Corporation vide its letter dated 10.11.2022 has reported that UGSS House service connection work has been started in Bharathidasan Nagar & Sridevi Nagar and the work will be completed on or before 31.07.2022.</p> <p>Mean while Corporation has been planned 3 Nos of 20 KLD Mini Sewage treatment plant at 3 places of Vilingiyambakkam lake drain entry point.</p> <p>The proposal sent to Director of Municipal Administration under Capital Grant Fund (CGF) with the cost of Rs.150.00 lakhs on 11.08.2022 (Roc No 9595/2021/E1). and the work will be completed within 3 months after issuing work order to the Contractor.</p> <p>During inspection on 13.04.2023 it was noticed that the Avadi City Municipal Corporation has not provided 3 Nos of 20 KLD Mini Sewage treatment plant at 3 places of Vilingiyambakkam lake drain entry point as reported earlier.</p>
2.	Controlling of Sewage/Sullage drained into Vilingiyambakkam lake at Bharathidasan nagar and Sridevi nagar in Avadi City Municipal Corporation from the unsewered areas.	Commissioner, Avadi City Municipal Corporation	<p>The Commissioner, Avadi City Municipal Corporation vide its letter dated 10.11.2022 has reported that the Avadi City Municipal Corporation has planned 3 Nos of 20 KLD Mini Sewage treatment plant at 3 places of Vilingiyambakkam lake drain entry point and the proposal sent to Director of Municipal Administration under Capital Grant Fund (CGF) with the cost of Rs. 150.00 lakhs on 11.08.2022 (Roc No 9595/2021/E1). The work will be completed within 3 months after issuing work order to the Contractor.</p> <p>During inspection on 13.04.2023 it was noticed that the Avadi City Municipal Corporation has not provided 3 Nos of 20 KLD Mini Sewage treatment plant at 3 places of Vilingiyambakkam lake drain</p>


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			entry point as reported earlier.
3.	Controlling of Sewage/Sullage drained into Vilinjiyambakkam lake from the residential areas in the vicinity of Sekkadu lake surplus channel and on either side of residential areas of Govindhanthangal lake surplus channel (Kavarappalayam) in Avadi City Municipal Corporation.	Commissioner, Avadi City Municipal Corporation	<p>The Commissioner, Avadi City Municipal Corporation vide its letter dated 10.11.2022 has reported that the Avadi City Municipal Corporation has planned 3 Nos of 20 KLD Mini Sewage treatment plant at 3 places of Villinjiyambakkam lake drain entry point and the proposal sent to Director of Municipal Administration under Capital Grant Fund (CGF) with the cost of Rs. 150.00 lakhs on 11.08.2022 (Roc No 9595/2021/E1). The work will be completed within 3 months after issuing work order to the Contractor.</p> <p>During inspection on 13.04.2023 it was noticed that the Avadi City Municipal Corporation has not provided 3 Nos of 20 KLD Mini Sewage treatment plant at 3 places of Villinjiyambakkam lake drain entry point as reported earlier.</p>
LONG TERM ACTION PLAN			
1.	Construction of Underground Sewerage System in the left out areas of Bharathidasan nagar and Sridevi nagar in Avadi City Municipal Corporation.	Commissioner, Avadi City Municipal Corporation	The Commissioner, Avadi City Municipal Corporation vide its letter dated 10.11.2022 has reported that in order to provide the 100% UGSS connections in Avadi City Municipal Corporation, work order was issued by the Avadi City Municipal Corporation to TWIC for the preparation of Detailed Project Report (DPR). The DPR preparation is under progress by the TWIC for the left out areas. The entire scheme will be completed by Dec-2025.
2.	Construction of Underground Sewerage System in the residential areas in the vicinity of Sekkadu lake surplus channel and on either side of the residential areas of Govindhanthangal lake surplus channel (Kavarappalayam) in Avadi City Municipal Corporation.	Commissioner, Avadi City Municipal Corporation	The Commissioner, Avadi City Municipal Corporation vide its letter dated 10.11.2022 has reported that in order to provide the 100% UGSS connections in Avadi City Municipal Corporation, work order was issued by the Avadi City Municipal Corporation to TWIC for the preparation of Detailed Project Report (DPR). The DPR preparation is under progress by the TWIC for the left out area. The entire scheme will be completed by Dec-2025.


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8. It is respectfully submitted that already direction was issued under Section 5 of Environment (Protection) Act, 1986, to the Commissioner, Avadi City Municipal Corporation to remit the interim Environmental compensation of Rs. 8 Lakhs vide Proceeding No. T1/TNPCB/F.32363/SWM/NGT 606 of 2018/2020-2 dated 27.11.2020 for the non-compliance of Solid Waste Management Rules, 2016 as per Hon'ble NGT Order dated 28.02.2020 & 02.07.2020 in O.A. No. 606 of 2018.
9. It is respectfully submitted that already this respondent issued directions under Section 33 A of the Water (Prevention and Control of Pollution) Act, 1974 as amended, to the Commissioner, Avadi City Municipal Corporation vide Proceedings dated 20.09.2021 to comply with the following:
- i) The Avadi City Municipal Corporation shall provide connections of UGSS to all households in the Bharathidasan nagar and Sridevi nagar in Avadi City Municipal Corporation by 31.12.2021 as committed.
 - ii) The Avadi City Municipal Corporation shall construct collection tanks at the entry point of sewage/sullage drained into Viliinjiyambakkam Lake at Bharathidasan nagar and Sridevi nagar and from the residential areas in the vicinity of Sekkadu lake surplus channel and on either side of residential areas of Govindhantangal lake surplus channel (Kavarappalayam) by 31.12.2021 as committed.
 - iii) The Avadi City Municipal Corporation shall expedite the action of providing full-fledged Underground Sewerage System (UGSS) for the entire Avadi City Municipal Corporation area with adequate Sewage Treatment Plants to treat the sewage/sullage in a year period.
 - iv) The Avadi City Municipal Corporation shall ensure that no discharge of residential sewage/sullage into Viliinjiyambakkam lake and other water bodies.
 - v) The Avadi City Municipal Corporation shall comply with the directions issued by TNPCB vide Proc. dt. 18.06.2021.
 - vi) The local body is liable to pay Environmental Compensation as per Hon'ble National Green Tribunal (NGT), Principal Bench order dt.


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02.07.2020 in O.A.No. 606 of 2018 for non-compliance of the above directions.

10. It is respectfully submitted that already this respondent issued directions under Section 33 A of the Water (Prevention and Control of Pollution) Act, 1974 as amended, to the Commissioner, Avadi City Municipal Corporation vide Proceedings No. T6/TNPCBD/LAW/LA-III/NGT/F011201/W/2021 dated 26.07.2021 to comply with the following as per Hon'ble NGT Order dated 10.03.2021 in O.A. No. 76 of 2020.

1. Avadi City Municipal Corporation shall provide full-fledged Underground Sewerage System (UGSS) with Sewage Treatment Plant to treat the sewage/sullage generated from Saravana nagar and Manigandapuram residential area so as to stop the discharge of sewage into Arafath Lake.
2. Avadi City Municipal Corporation shall ensure that no discharge of residential sewage into the Arafath Lake.

11. It is respectfully submitted that the Hon'ble National Green Tribunal (NGT), Principal Bench in O.A. No. 606 of 2018 has passed order dated 02.07.2020 inter alia that:

"The compensation regime already laid down for failure of the Local Bodies and/or Department of Irrigation and Public Health/In-charge Department to take action for treatment of sewage in terms of observations in Para 36 above will result in liability to pay compensation as already noted above which are reproduced for ready reference:

ii. Commencement of setting up of STPs – 31.03.2020. Compensation is payable for failure to do so at the rate of Rs. 5 lakh per month per STP by concerned Local Bodies/States (in terms of orders dated 28.08.2019 in O.A. No. 593/2017 and 06.12.2019 in O.A. No. 673/2018) w.e.f 01.04.2020.

12. It is respectfully submitted that in due compliance of the Hon'ble National Green Tribunal (NGT), Principal Bench in O.A. No. 606 of 2018, Board has also issued direction to the Commissioner, Avadi City Municipal Corporation that "the local body is liable to pay Environmental Compensation as per the


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above said Hon'ble NGT order for non-commencement of setting up of STPs before 31.03.2020., i.e for the period from 01.04.2020 to July 2021."

13. It is respectfully submitted that show cause notice was issued under Section 5 of Environment (Protection) Act, 1986 as amended to the Commissioner, Avadi City Municipal Corporation, as to why the Board shall not levy interim Environmental compensation of Rs. 160 Lakhs vide Proceeding No. T6/TNPCB/045619/TLR/2021 dated 15.12.2022 for not providing Common STP for the treatment of sewage generated from the left out areas of Moontru nagar (Periyar nagar, Anna nagar, Sathya nagar, Annai Anjugam nagar and Gangai amman nagar located within the Avadi City Municipal Corporation area and also not taken any steps to stop the discharge of sewage into Ambattur lake from the above said areas.
14. It is respectfully submitted that there has been no response from Avadi City Municipal Corporation for the abovementioned show cause notice dated 15.12.2022.
15. It is respectfully submitted that revised Environmental Compensation of Rs.180 lakhs is calculated for the period from April 2020 to March 2023 and steps are being taken by this Respondent to remit the same.

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

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BEFORE ME

VERIFICATION

I, R. Rajamanickam, S/o. P.M.Ramasamy, 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.


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

Original Application No.06 of 2021

Tribunal on its own motion-SUO MOTU
Based on The News item in the Hindu
Newspaper Edition Dated: 21.12.2020,
"Villnjiyambakkam Lake shrunk due to
Encroachment,"

Vs

The Principal Secretary to Government,
Public Works Department,
Govt. Secretariat, Fort St. George,
Chennai, Tamil Nadu and others.

...Respondents

**REPORT FILED ON BEHALF OF THE 4TH
RESPONDENT - TAMIL NADU
POLLUTION CONTROL BOARD.**

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

Date:17.04.2023.

Date of hearing on:18.04.2023.

