

REPORT OF THE JOINT COMMITTEE CONSTITUTED BY THE HONOURABLE NGT SOUTH ZONE IN THE MATTER OF O. A. NO.10, 18, 58 AND 105 OF 2017 SUBMITTED BEFORE THE HONOURABLE NATIONAL GREEN TRIBUNAL, SOUTHERN ZONE, CHENNAI, AS PER THE ORDER DATED FEBRUARY 01, 2022

BACKGROUND

The Hon'ble National Green Tribunal, Southern Zone, Chennai in O.A. No. 10, 18, 58 and 105 of 2017 has directed as follows in its order dated: 01.02.2022; The copy of the order is attached as *Annexure I.*

".....6. In the Joint Committee report, it was mentioned that they have collected the soil and water samples from the compound of M/s. ITC Limited, Paper Boards and Speciality Boards Division and sent it for analysis and they are awaiting the report and once the same is received, they may be able to come up with the further report.

7. It is also seen from the Joint Committee report that construction of the Sewage Treatment Plant (STP) will be completed by end of December 2021 in the Government Hospital, Mettupalayam and they may be able to commission the same by end of January-2022.

8. The Tamil Nadu Pollution Control Board is also expected to file an independent report regarding the sufficiency of the temporary remedial measures undertaken by the Mettupalayam Municipality and suggest further remedial measures (if any) to be done by them to avoid the untreated sewage from reaching the water body.

9. The learned counsel appearing for the State Departments submitted that civil work of STP has been completed and they may be able to commission the same immediately after getting the electric connection. The State Departments are expected to expedite the commissioning of STP in the Government Hospital so as to prevent the untreated sewage being discharged into the drain which ultimately reaches the Bhavani River.

10. The Chief Medical Officer, Government Hospital, Mettupalayam, Tamil Nadu Pollution Control Board and the Joint Committee are directed to file the further report as directed by this Tribunal on or before 28.02.2022 by e-filing in the form of Searchable PDF/OCR Supportable PDF and not in the form of Image PDF along with necessary hardcopies to be produced as per Rules.

11. The Registry is directed to communicate this order to the official respondents, members of the Joint Committee, Tamil Nadu Pollution Control Board and the Chief Medical Officer, Government Hospital, Mettupalayam by e-mail for their information and compliance of Directions.

12. For consideration of further reports and also for hearing, post on 28.02.2022....”

Reply for Para No: 6

In this regard it is submitted that the NGT Joint Committee has inspected the River Bhavani Stretch on December 08, 2021. Water samples at ten locations in River Bhavani, soil & water samples in and around the unit of M/s. ITC Limited, Paper Boards and Specialty Boards Division, Unit were collected and sent to Laboratories for analysis. The reports of analysis is submitted as below

RESULTS OF RIVER BHAVANI WATER SAMPLES COLLECTED ON 08.12.2021

S. No.	Parameters	Unit	BR - 01A	BR - 01	BR - 02	BR - 03A	BR - 03	BR - 04	BR - 05	BR - 06	BR - 07	BR - 08
1	Turbidity	NTU	2.8	2.2	2.0	1.8	2.7	2.0	2.2	1.9	1.9	2.0
2	Colour	ml	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
3	Conductivity at 25°C	µmhos/cm	768	207	427	223	317	249	271	224	280	393
4	pH at 25°C	Number	7.37	7.18	6.60	6.97	6.86	6.98	6.96	6.84	6.82	7.94
5	Total Suspended Solids at 103°C - at 105°C	mg/l	8	8	8	8	8	8	8	8	8	8
6	Total Dissolved Solids at 180°C	mg/l	476	136	264	144	196	160	176	144	176	248
7	Chloride as Cl	mg/l	22	20	50	19	34	22	22	21	27	51
8	Sulphate as SO ₄	mg/l	17	<5	11	5	12	9	9	8	9	16
9	Oil and Grease	mg/l	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4
10	BOD (at 27°C for 3 days)	mg/l	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
11	COD	mg/l	16	18	16	8	8	8	8	8	8	8
12	Manganese	mg/l	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

13	Ammonical Nitrogen as NH ₃ -N	mg/l	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
14	Total Kjeldahl Nitrogen	mg/l	2.24	<2	<2	<2	<2	<2	<2	<2	<2	<2
15	Fluoride as F	mg/l	0.08 3	0.31 7	0.07 8	0.12 2	0.10 6	0.11 7	0.11 1	0.09 4	0.12 2	0.14 4
16	Ph. Compounds	mg/l	<0.0 5									
17	% Sodium	%	41	34	35	30	29	31	31	29	38	30
18	Total Hardness as CaCO ₃	mg/l	178	64	122	72	98	80	86	70	76	120
19	Alkalinity as CaCO ₃	mg/l	228	108	136	108	124	128	112	92	108	124
20	Ph. Alkalinity	mg/l	40	8	8	16	4	4	4	4	<1	32
21	Nitrate Nitrogen as NO ₃	mg/l	0.99 4	0.50 8	0.62 6	0.44 3	0.57 2	0.59 4	0.52 9	0.46 4	0.43 2	0.11 9
22	Nitrite Nitrogen as NO ₂	mg/l	0.02 6	0.03 6	0.05 2	0.03 4	0.11 4	0.09 5	0.33 8	0.09 8	0.13 0	0.07 6
23	Phosphate as PO ₄	mg/l	0.81 9	0.72 5	0.92 0	0.79 7	0.78 2	0.79 9	0.85 8	0.77 0	0.78 2	0.62 2
24	Cyanide	mg/l	<0.0 5									
25	Calcium as Ca	mg/l	46	17	26	16	21	18	20	18	18	28
26	Magnesium as Mg	mg/l	15	5	14	7.7	11	9	9	6	7	12
27	Sodium as Na	mg/l	58	16	19	17	19	17	18	14	23	25
28	Potassium as K	mg/l	7	3	3	3	3	3	3.0	3.0	5	6.0
29	Iron Total as Fe	mg/l	<0.0 5									
30	Dissolved Oxygen	mg/l	6.3	6.5	6.7	6.3	6.2	6.3	6.6	6.7	6.4	6.5
31	Free Ammonia	mg/l	0.59 5	0.29 7								
32	Boron	mg/l	<0.0 02									
33	Hexavalent Chromium	mg/l	<0.0 5									
34	Total Residual Chlorine	mg/l	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
35	SAR	mg/l	1.9	0.9	1.2	0.8	0.8	0.8	0.8	0.7	1.2	0.9
36	Residual Sodium Carbonate	-	-Ve									
37	Total	mg/l	<0.0	<0.0	<0.0	<0.0	<0.0	<0.0	<0.0	<0.0	<0.0	<0.0

	Chromium		5	5	5	5	5	5	5	5	5	5
38	Copper	mg/l	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
39	Zinc	mg/l	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
40	Lead	mg/l	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
41	Cadmium	mg/l	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
42	Nickel		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
43	Faecal Coliform	MPN/100M L	17	4	7.8	6.8	6.8	31	17	17	12	<1.8
44.	Total Coliform	MPN/100M L	33	9.2	26	21	17	63	39	38	34	1.8

Note : BR -01A- Near Kavundampalayam Scheme water pump house, BR – 01-Mr. Kittu's Thottam, Vilamarathur, BR -02 - Badrakaliamman Koil BR -03A - Near Kuduthurai malai (Thekkampatty Panchayat), BR -03 - Near Samanna Water Tank & Mettupalayam Municipality Water Pumping station, BR – 04 - Backside of Subramaniayar Temple, (After confluence of Uppupallam Odai)), BR – 05 - V.O.C Street, Ward No.5 (After confluence of Srirengarayan Odai), BR-06 - Arulmigu Sithi Vinayagar Temple in Alangombu BR – 07 - Near Subramaniyar Koil in Sirumugai, BR – 08 - Sirumugai water pumping station at Koothamandi pirivu

The above table clearly shows, discharge of sewage from the Mettupalayam Municipality and Sirumugai Town Panchayat, due to the presence of Faecal coliform in all seven locations. Other parameters are within the permissible limits for drinking water standards except Copper (<0.2 mg/l) which is found slightly higher than the drinking water standards 0.05 mg/l in all locations, which may be due to use of copper sulphate based biocides for the areca nut, coconut, banana or any other plantations, resulting in the increase of copper in the river.

RESULTS OF SOIL SAMPLES COLLECTED IN AND AROUND M/s. ITC LIMITED,
PAPER BOARDS ON 08.12.2021

S. No.	Parameters	Unit	Code - 01	Code - 02	Code -03	Code – 04	Code - 05	Code -06	Code – 07 (reference)	Code - 08	Code - 09
1	C:N Ratio	-	5.9:1	5.8:1	4.4:1	4.1:1	4.1:1	6.1:1	6.0:1	4.7:1	4.4:1
2	Conductivity at 25° C	µs/cm	78	68	58	39	57	79	79	29	142

3	pH at 25°C	-	7.71	7.72	7.59	7.22	7.84	8.24	8.31	6.48	8.12
4	Phosphorus as P	mg/kg	14.5	15.7	11.5	14.7	15.2	16.7	15.8	19.2	16.2
5	Potassium as K	mg/kg	1756	1823	1940	1969	1840	1812	2108	2311	2060
6	Sodium Absorption ratio	-	BDL (DL:1 .5)	BDL (DL:1.5)	BDL (DL:1 .5)	BDL (DL:1 .5)					
7	Chromium as Cr	mg/kg	41.24	32.62	66.83	30.83	40.55	69.41	22.40	40.70	49.08
8	Manganese as Mn	mg/kg	177.3 1	186.7 1	346.3 5	137.9 2	230.9 1	747.2 0	132.0 2	174.8 7	186.8 3
9	Iron as Fe	mg/kg	28349 .27	20578 .24	31955 .19	10652 .68	13679 .48	22222 .39	7413. 39	18002 .61	14756 .06
10	Nickel as Ni	mg/kg	14.93	11.33	28.38	9.45	24.55	50.76	14.12	13.58	22.75
11	Copper as Cu	mg/kg	32.43	17.43	39.71	8.94	29.63	93.75	13.92	14.32	21.61
12	Zinc as Zn	mg/kg	21.58	18.06	15.06	9.90	15.08	15.01	15.57	15.31	25.74
13	Cadmium as Cd	mg/kg	BLQ (LOQ :2)	BLQ (LO Q:2)	BLQ (LOQ :2)	BLQ (LOQ :2)					
14	Mercury as Hg	mg/kg	BLQ (LOQ :2)	BLQ (LO Q:2)	BLQ (LOQ :2)	BLQ (LOQ :2)					
15	Lead as Pb	mg/kg	4.97	3.74	2.68	BLQ (LOQ :2)	BLQ (LOQ :2)	2.06	BLQ (LO Q:2)	2.44	2.73

Note: Code 01 – Mr. Ashokrajkumar Thottam S/o. Easwara Gownder, Code 02 – Previously ETP sludge stored area, Code 03 – Previously bottom ash stored area near stand by Boilser 44T/Hr, Code 04 – Kumachiparai Odai near Mr.Duraisamy Thottam, Code 05 – Mud Road in Between Kumachiparai Odai Mr.Duraisamy Thottam, Code 06 – Irrigation land (Coconut Farm) backside of vermi compost, Code 07 – Irrigation land by using fresh water near vermin compost, Code 08 – Mr. Duraisamy Thottam Code 09 – Mr. Somanur Gownder Thottam (Borewell water using for irrigation)

The industry is carrying out cultivation with treated effluent and fresh water. The soil samples were collected by the Joint Committee in both the locations as well as in the neighbor's cultivation land and odai. The soil sample collected in the field using fresh water is taken as a reference soil sample to compare with the quality of soil samples collected in other locations. The soil samples analysis report ascertained that there are traces of heavy metals presence as compared with the reference sample (Code 07). The traces of heavy metals may be due to the past discharge of partial/untreated effluent.

RESULTS OF SURFACE/WELL WATER SAMPLES COLLECTED IN AND AROUND

M/s. ITC LIMITED, PAPER BOARDS ON 08.12.2021

S. No.	Parameters	Unit	SN-312	SN-313	SN-314	SN-315	SN-316
1	pH at 25°C	-	8.18	7.65	7.24	7.68	8.31
2	Conductivity at 25° C	mg/L	910	1567	2950	1073	797
3	Total Suspended Solids	mg/L	10	14	8	8	10
4	Total Dissolved Solids	mg/L	482	732	1744	596	436
5	BOD For 3 days @27°C	--	<2	<2	8	<2	<2
6	COD	µs/cm	8	16	64	8	8
7	Ammonical Nitrogen		<2	<2	<2	<2	<2
8	Total Kjeldahl Nitrogen	mg/L	<5	<5	<5	<5	<5
9	Sulphide	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0
10	Phenolic Compounds	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
11	% Sodium	mg/L	34	29	47	20	35
12	Iron Total	mg/L	0.50	0.17	0.16	0.30	0.92
13	Total Chromium	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01

14	Copper	mg/L	0.3988	0.2480	0.5072	0.2409	0.0942
15	Zinc	mg/L	0.4098	0.1560	0.3488	0.2798	0.0792
16	Lead	mg/L	<0.015	<0.015	<0.015	<0.015	<0.015
17	Cadmium	mg/L	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008
18	Nickel	mg/L	0.0612	0.0432	0.0512	0.0314	<0.006

The ground and surface water parameters are within the permissible limits for irrigation and livestock. At present no contamination of ground/surface water observed due to industrial activity. In all the ground/surface water samples, Nickel is found slightly higher than the drinking water standard 0.02 mg/l in four locations and TDS also is higher than the drinking water standard 500 mg/l in 3 locations, which may be due to natural resources.

RESULTS OF TRADE EFFLUENT TREATED/UNTREATED WATER SAMPLES
COLLECTED AT M/s. ITC LIMITED, PAPER BOARDS ON 08.12.2021

S. No.	Parameters	Unit	Combined Treated Effluent (ETP Outlet and treated Sewage)	Treated effluent pumping tank (Used for irrigation on its own land)	Standards for on land for irrigation by TNPCB
1	pH at 25°C	-	7.94	8.03	5.5-9.0
2	Conductivity at 25° C	mg/L	2890	2590	-
3	Total Suspended Solids	mg/L	24	38	200
4	Total Dissolved Solids	mg/L	1604	1422	2100
5	BOD For 3 days @27°C	--	17	19	100
6	COD	µs/cm	160	176	-
7	Ammonical Nitrogen (as N)	mg/L	<2	<2	-

8	Total Kjeldahl Nitrogen	mg/L	<5	<5	-
9	Sulphide	mg/L	<1.0	<1.0	2.0
10	Phenolic Compounds	mg/L	<0.001	<0.001	5.0
11	% Sodium	mg/L	41	43	60
12	Iron Total	mg/L	0.38	0.34	--
13	Total Chromium	mg/L	<0.01	<0.01	2.0
14	Copper	mg/L	0.2488	0.3098	3.0
15	Zinc	mg/L	0.3072	0.2488	1.5
16	Lead	mg/L	<0.015	<0.015	1.0
17	Cadmium	mg/L	<0.0008	<0.0008	1.0
18	Nickel	mg/L	0.0488	0.0359	3.0

From the above table, it is observed that the treated effluent parameters are within the limits prescribed by the TNPCB.

Reply for Para No: 7

The Hospital authorities in their letter dated 24.02.2022 informed that the Sewage Treatment Plant erection work has been completed and in trail run operation. Further the Hospital authorities informed that the Sewage Treatment Plant STP will be commissioned in the first week of March, 2022. The status report furnished by the CMO, Government Hospital, Mettupalayam is submitted in Annexure-II.

Reply for Para No: 8

The Joint Committee recommended Mettupalayam Municipality to execute phytoremediation in the major drains adjoining the River Bhavani as a short term measure. Mettupalayam Municipality constructed wetland system with phytoremediation in the upstream side of Uppupallam Odai. During Joint Committee inspection it was observed that Phytoremediation is under operational condition. Further the Sewage treatment plant under construction will be commissioned shortly.

Reply for Para No: 9

Mettupalayam Municipality in its report dated 24.02.2022 has submitted that around 98% of the Sewerage Treatment Plant (STP) construction is nearing completion. It was informed that due to the existing COVID-19 pandemic situation, civic body election code of conduct and approval from the National Highway Authority of India awaited, the construction work was comparatively slow. The overall progress of the UGSS scheme is 90.91%. The status report of construction of UGSS and STP is submitted in Annexure-III

The Hospital authorities in their letter dated 24.02.2022 informed that the STP erection work has been completed and in trail run operation. Further the Hospital authorities informed that the Sewerage Treatment Plant STP will be commissioned in the first week of March, 2022. The status report furnished by the CMO, Government Hospital Mettupalayam is submitted in Annexure-II.

Further it is submitted that the Joint Chief Environmental Engineer (M), TNPCB, Coimbatore is a Joint Committee member and the District Environmental Engineer, TNPCB, Coimbatore North is the nodal officer, hence the Hon'ble NGT(SZ), Chennai may please consider this report as independent report by the TNPCB.

Report dated February 25, 2022

 Thiru R. Vinoth Municipal Commissioner Mettupalayam Municipality Mettupalayam.	 Tmt. Poornima B.M. Scientist D Central Pollution Control Board Regional Directorate - Chennai
	
Dr. P. Asokan Joint Chief Environmental Engineer(M) Tamil Nadu pollution Control Board Coimbatore	Dr. G.S. Sameeran, I.A.S. District Collector Coimbatore.