

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

IN

ORIGINAL APPLICATION NUMBER 42 OF 2024 (SZ)

OLD OA 786 OF 2023 (PB)

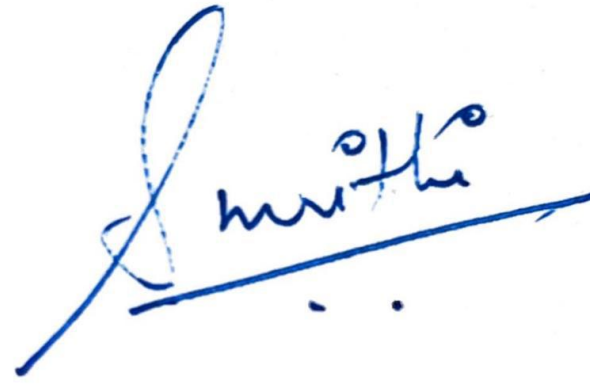
IN THE MATTER OF

**Tribunal on its own motion SUO MOTO based on the news item in
'The Hindu' dated 11/12/2023, titled "Clear Encroachments on Kallai
to prevent Chennai like situation : Committee".**

Applicant : SUO MOTU

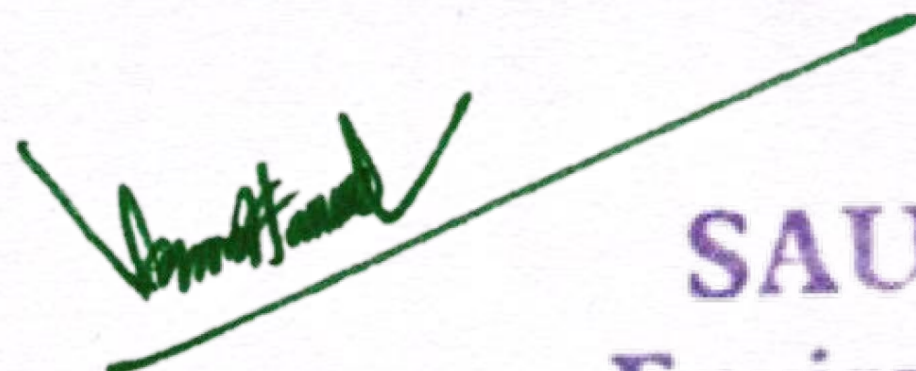
VS

Respondent (S) : State of Kerala and Ors



**M/s. Rema Smrithi VK
Standing Counsel for**

**REPORT SUBMITTED BY ENVIRONMENTAL ENGINEER,
KERALA STATE POLLUTION CONTROL BOARD, DISTRICT
OFFICE, KOHIKODE, ON BEHALF OF THE THIRD
RESPONDENT**



**SAUMA HAMEED
Environmental Engineer**

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SAUMA HAMEED
Environmental Engineer

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SOUTHERN ZONE**

IN

**ORIGINAL APPLICATION NUMBER 42 OF 2024 (SZ)
OLD OA 786 OF 2023 (PB)**

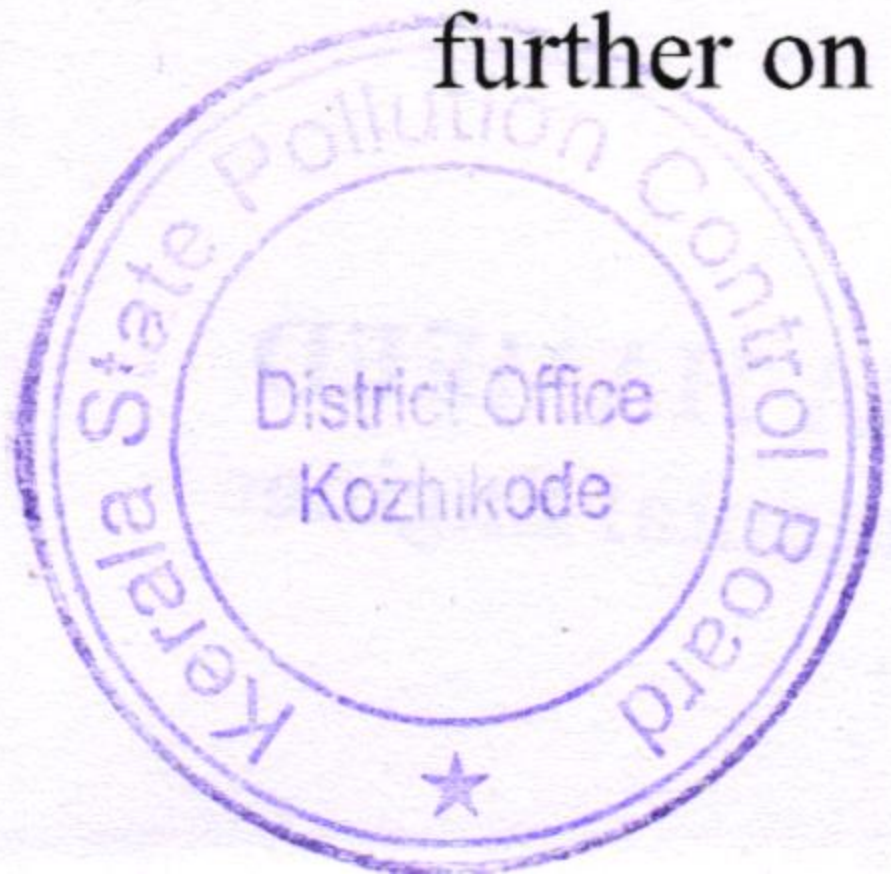
IN THE MATTER OF

**Tribunal on its own motion SUOMOTO based on the news item in
'The Hindu' dated 11/12/2023, titled "Clear Encroachments on Kallai
to prevent Chennai like situation: Committee".**

Back ground in brief:-

The above case has been registered suo motu, by the Principal Bench of the National Green Tribunal, New Delhi as Original Application No: 786 of 2023(PB), based on the news item published in 'The Hindu' dated 11/12/2023, titled "**Clear Encroachment on Kallai to prevent Chennai like situation: Committee**", which has been transferred to the southern zone bench vide Hon'ble NGT order dated 10/01/2024 and renumbered as Original Application NO: 42 of 2024 (SZ).

As the matter relates to the Kallai River which is situated in the State of Kerala, the registry impleaded the concerned authorities of the State of Kerala as respondent in the proceeding dated 25/03/2024, and the matter was posted further on 20/05/2024. Further vide order dated 20/05/2024, the Hon'ble NGT



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had directed to file reports by the respondents and posted the matter on 25/07/2024. An authorization letter was received from the Board Member Secretary dated 13/06/2024, by number KSPCB/1111/2024-SEE1, authorising the Environmental Engineer, District Office of Board Kozhikode, to represent Kerala State Pollution Control Board in the OA No. 42 of 2024(SZ), directing to file a report on behalf of the third respondent, Member secretary, Kerala State Pollution Control Board. A copy of the authorization letter is enclosed here with and marked as **Annexure I**.

It was noticed that, in the order dated 10/01/2024, of the Hon'ble NGT (PB) the matter of the OA was mentioned to be related to Kallai of Chennai, which is in the State of Tamil Nadu. The respondents mentioned were also from State of Tamil Nadu. But in the News Paper report based on which the Principal Bench had taken up this matter, the river mentioned is River Kallai in Kozhikode District, Kerala. Hence in order to clarify the ambiguity the Board Standing Counsel was contacted for urgent instructions on whether the report has to be filed for hearing on 25/07/2024. In reply, this respondent was instructed by the Board Standing Counsel that, as it could have been an inadvertent mistake made by the NGT (PB) or the concerned registry, the same shall be clarified with NGT (SZ) and can proceed accordingly, and any reports as sought can be filed after this exercise. The Board Standing Counsel was again contacted after the hearing dated 25/07/2024, and got confirmation regarding the State mentioned in the Hon'ble NGT order, as Kerala itself. Accordingly on the basis of order dated 10/09/2024 of the Hon'ble NGT (SZ) this report is prepared and respectfully submitted here with.



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1. It is humbly submitted before the Hon'ble Tribunal that Encroachment Survey does not come under the functional purview of Kerala State Pollution Control Board. However, the status details of action plan regarding 'Kallai Polluted River Stretch Rejuvenation' which had started back in year 2019, is respectfully submitted here with.

2. Kallai River is one of the smallest rivers in the State of Kerala, originating from the Western Ghats of Cherukkulathur village of Kozhikode district, at a height of 45 metre. It is linked to the Chaliyar River by an artificial canal on the south side of the small timber village of Kallai, which is situated on the bank of the river. The river flows through Cherukkulathur, Kovur, Olavanna, Mankavu, Kallai, Pallikandi and Kothi and ultimately evacuates in the Arabian Sea at Kozhikode. The river basin is located in the Kozhikode district. The river is 22 kilometres in length and it spreads over an area of 96 square kilometres. The river is commercially very significant. This river basin is considered as the ancient place of international trade and was used for inland water transports.

3. **History of River activity**

In the past, the river was the second largest centre of timber business in the world. The Canoli Canal in the north, and 'Beypore – Kallai' canal in the south, are linked to the Kallai River. The Canoli Canal, which is an artificial canal, which has a length of 11.5 kilometres, connects the Kallai River and Elathur River. This canal was earlier used for bringing timber from Beypore and Nilambur, and for inland navigation. Kallai River banks was one of the most important place in the world for timber business, during the 19th century, famous for its



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Teak and Rose woods, sourced from the famous Nilambur forests. At one time, this was considered to be the second largest timber yard in the world. Major portion of the river basin were occupied by flourishing timber depots and saw mills. Timber logs used to be seen at the length and breadth of this river.

4. An important feature of this yard was, logs collected from various sources were left for seasoning in the saline water for months and years to get additional strength. Due to the availability of high quality timber, Boats and ships building industries were thriving at a port nearby, known as the 'Beypore Port'. Boats and ships made out of wood were in great demand and were exported to different parts of the world. Over a period of time, the timber business has substantially reduced, due to non availability and restriction in cutting of timber, and the same has directly affected the ship building industry too. While the timber trading is still in progress at a low level, many of the timber industries had closed down, and still a few number of timber mills exist in the area. The Kallai River still supports the growth of timber markets and saw mills in the region. As the saline water of the river provides extra strength to the timber, logs from different regions of the state are allowed to undergo seasoning in Kallai River for long periods from several weeks to months. This seasoning process occurring within the river obstructs the river flow, The Canoli Canal and several small streams/channels joins the river in this stretch.. No water is being extracted from the Kallai River for drinking or sanitation purpose. A Google map of the Kallai River is enclosed here with and marked as **Annexure II**.



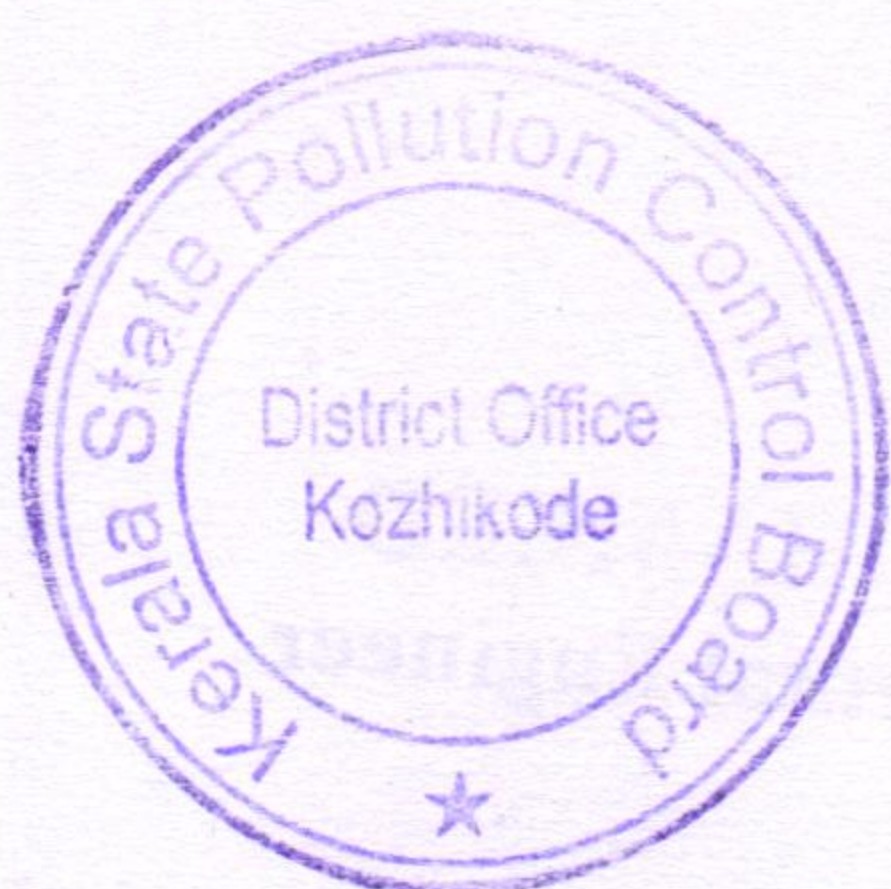
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5. This eight kilometre stretch of the Kallai River, spanning from 'Arakkinar to Thekkepuram' was identified by the Central Pollution Control Board (CPCB), as one of the Twenty One Polluted River Stretches in Kerala. It was classified under priority V due to the level of Biological Oxygen Demand (BOD) in the range of 3 to 6 mg/litre. Based on the Hon'ble NGT Orders in OA Number 673/2018, and as per the Order G.O (MS) No.12/ 2019/ WRD dated 30/04/2019, District Level Technical Committees (DLTC) was formed in every district of Kerala aiming at the reviving and rejuvenation of the Polluted River Stretches. DLTC was formed in Kozhikode district also and meetings and field visits were conducted, to identify the specific reasons of pollution, based on which the Action Plan for rejuvenation of Kallai River was formulated.

6. The committee had observed that the major causes and sources of pollution of the river are the following.

- Lack of flushing and concentration of pollutants especially in the lower stretches of the river by accumulation of waste from illegal discharges by human and industrial activities, there by discharging sewage and industrial effluents in to the river.
- Seasoning of wood which involves deposits of logs for long periods even over years which will cause stagnation of flow of river water, and accumulation of waste and water logging in command areas. These results in high rate of sediment debris in the river.



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- Microbial activities in the bio films in the underground and salinity intrusion in to the river along coastal region along with coastal erosion also contributes to the river quality deterioration.

On the basis of the findings, "Action plan" was proposed in June 2019, by the concerned departments in the DLTC, and as per the same, river rejuvenation efforts are ongoing since year 2019. The various short term, long term and continuous actions which are to be accomplished by the various stake holder departments/offices which are members in the DLTC, were included in the Action Plan.

7. It is humbly submitted that in order to mitigate the pollution problems, efforts have been initiated from Kozhikode Regional and District Offices of the Kerala State Pollution Control Board, to find out the individual sources causing illegal, untreated discharges in the river, canal, and streams causing undesirable risk of pollution in the river, and had given direction letters to the identified defaulting establishments and the concerned local body, the Kozhikode Corporation, to implement necessary corrective measures.
8. Sewage Treatment Plants (STPs) at the Government Medical College Kozhikode are operational. 3 New Sewage treatment plants became operational (2 MLD with co-treatment facility of 100 KLD, 1 MLD and 500 KLD) along with a 2 MLD plant which already existed. Plant (CSTPs) proposed by the Kozhikode corporation at Kothi and Avikkal had been dropped due to public protest. A Common Sewage Treatment Plant Project of 27.5 MLD at Sarovaram Bio park is at an initial stage of implementation for which Technical Sanction is to be obtained from Kerala Water Authority, as it is updated in the Monthly Progress Report (MPR) vide **Annexure III**.



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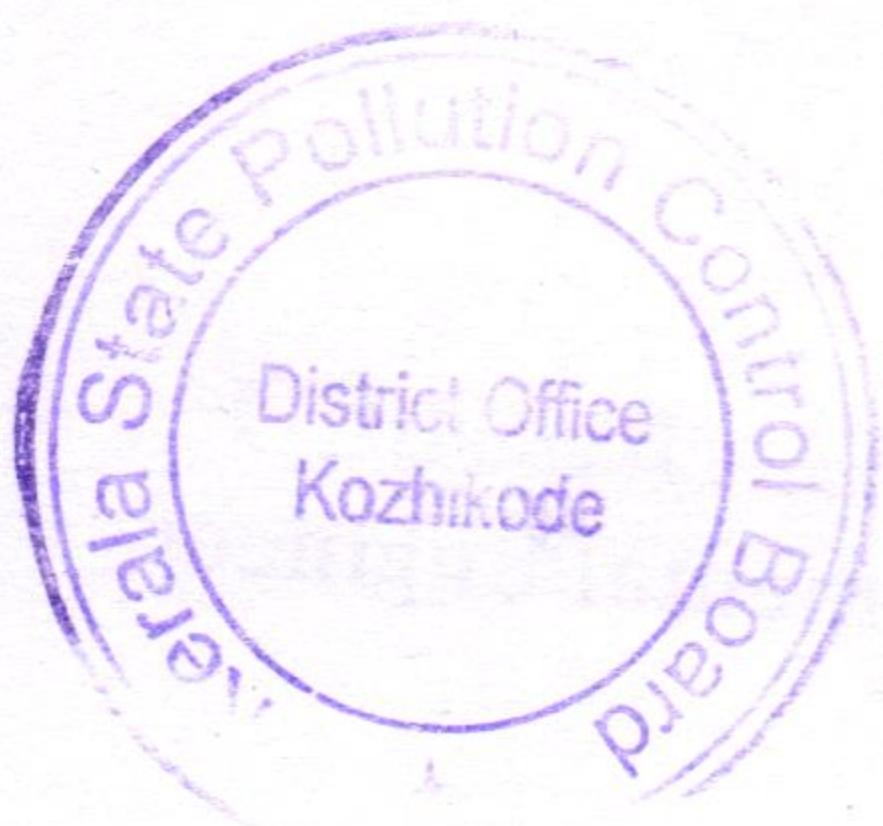
4. Kallai Railway Bridge (KL5)
5. Kothi bridge (KL6)
6. Canoli Canal at Eranjikkal (3461) &
7. Canoli Canal at Mooriyad (5224).

Among the above seven sampling stations 6 & 7 are NWMP sampling stations. A photograph of all the sampling stations along with their Google map locations are attached here with and marked as **Annexure IV**. All the sampling locations are at the centre of the river where there is sufficient flow.

11. According to the 2022 reclassification of Polluted River Stretches by the Central Pollution Control Board (CPCB), the Kallai River, along the Kallai stretch is still included under priority V with a maximum Biological Oxygen Demand (BOD) level of 4.6 mg/l.

A comparative data of various parameters of the water analysis reports, for the past years 2023, and 2024 till last month (September 2024) are prepared for the routine samples collected from the various sampling points, in the Kallai polluted river stretch is attached here with and marked as **Annexure V**. The quality of river water during the year 2024 (January to September) shows better results than that of the previous year, on comparison.

12. It is humbly submitted that, from the Annexure III MPR, on Kallai River Action Plan it can be observed that most of the short term activities are completed and continuous activities like surprise inspections and routine monitoring are ongoing, but the major action of desilting and dredging of the river at the stagnated points to enable a free flow of river water are pending materialisation. More over



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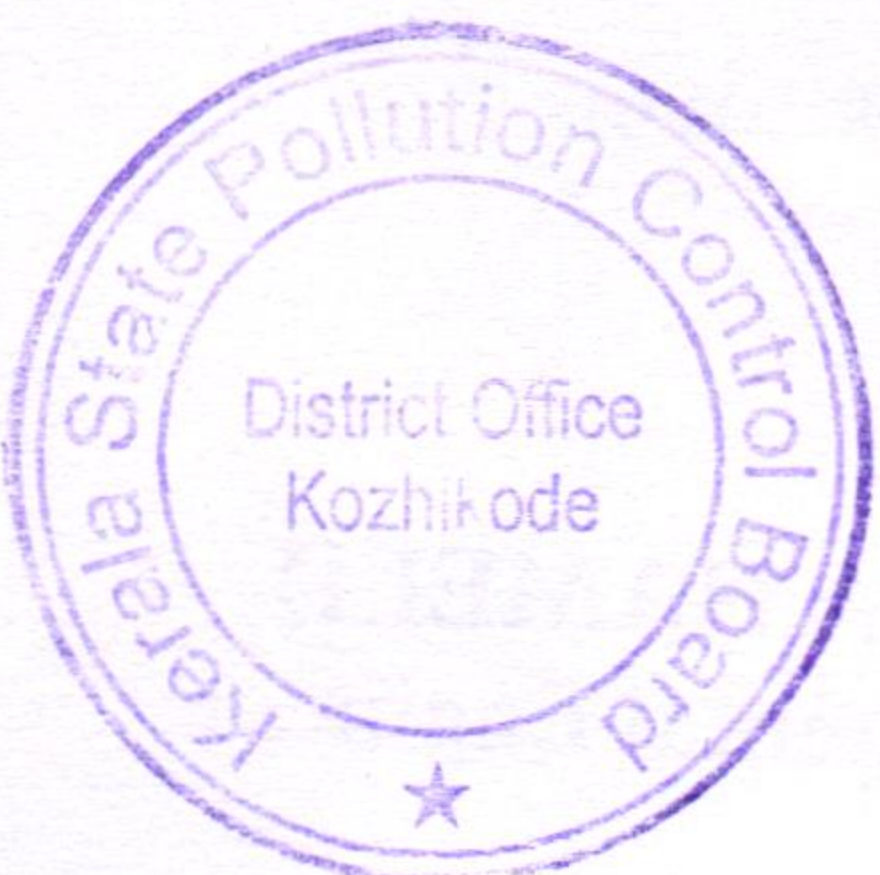
SAUMA HAMEED
Environmental Engineer

9. The other major works carried out as per the Monthly Progress report is a follows:

- a. Established 6 aerobic compost units, 6 MCFs, 6 mini MCFs, 2 RRF in Kozhikode Corporation and windrow composting plant (70 TPD) is in operation.
- b. Established 6 aerobic compost units, 18 mini MCFs in Perumanna Grama Panchayat and 8 mini MCFs at Peruvayal Grama Panchayat.
- c. Setting up of rendering treatment plant for chicken stall wastes. 217 chicken stalls in the Corporation area are handing over chicken waste to rendering plant.
- d. Bio mining partially completed at Njeliyanparambu.
- e. Technical sanction obtained for implementation of water flow project (Aluvangal Thazham, Perumbatta, Elamanapadam, Valiyapadam)
- f. Periodic Cleaning of Canoli Canal and cleaning of other canals nearby river Kallai by Irrigation Department.
- g. CCTV cameras have been installed for the identification and monitoring of illegal discharge.

10. Water quality assessment are being conducted on a monthly basis by the Kerala State Pollution Control Board from the selected five sampling stations in the Kallai River, and two sampling stations under the NWMP (National Water Quality Monitoring Programme), along the identified polluted stretch of eight kilometre of Kallai River. The various sampling stations are the following:

1. Palathumkandi bridge (KL1)
2. Kaduppini bridge (KL2),
3. Mankavu bridge (KL3)



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Encroachment Survey of the river banks is not included in this Action Plan. River encroachments can be identified only with a detailed survey by the revenue department, and the same is to be initiated from the District Administration.

13. It is respectfully submitted that, the Kallai River rejuvenation will become fruitful only with the materialisation of the common STP project of Kozhikode Corporation at Sarovaram Bio Park as well as periodical desilting and dredging activities by the concerned departments. Besides the above, necessary initiatives may be taken to conduct a detailed survey to find out encroachment of the river banks and do needful to restore the same by concerned authorities. Also necessary action may be taken to remove the long deposited unwanted/decayed logs from the river obstructing free flow of river and accumulating sediment debris and wastes.

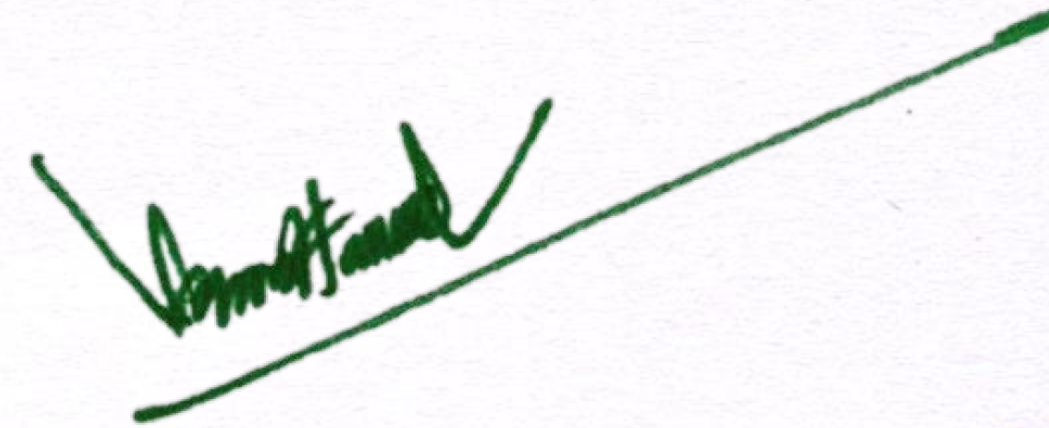
All the facts stated above are true to the best of my knowledge,

Information and belief

Dated this, 1st day of November 2024.

For and on Behalf of the Third Respondent,

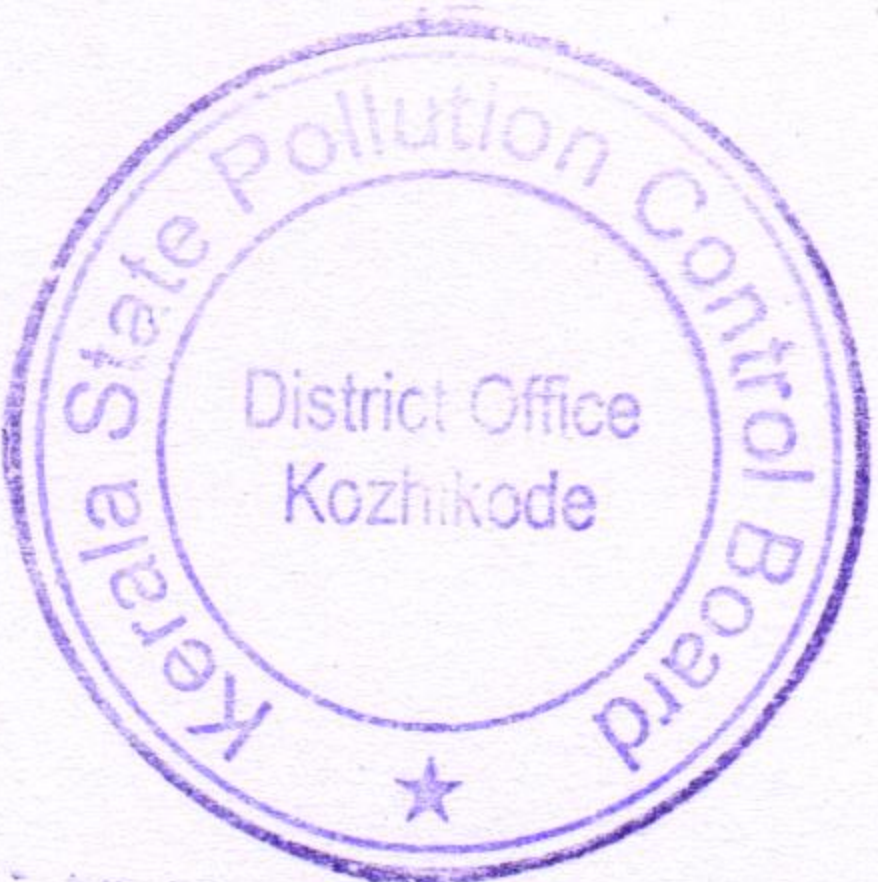
Member Secretary: Kerala State Pollution Control Board



Environmental Engineer

SAUMA HAMEED
Environmental Engineer

Kerala State Pollution Control, District office, Kozhikode



☎: General: 0471- 2312910, 2318153, 2318154, 2318155 Chairman: 2318150 Member Secretary: 2318151
e-mail: chu.kspcb@gov.in; ms.kspcb@gov.in FAX: 2318152 web: kspcb.kerala.gov.in



KERALA STATE POLLUTION CONTROL BOARD

കേരള സംസ്ഥാന മലിനീകരണ നിയന്ത്രണ ബോർഡ്

Pattom P.O., Thiruvananthapuram – 695 004

പട്ടം പി.ഒ., തിരുവനന്തപുരം- 695 004



KSPCB/1111/2024-SEE-1

Date:13/06/2024

AUTHORISATION

Sub: "Clear encroachments on Kallai to prevent Chennai-like situation" : O.A. No.42 of 2024 (SZ) (Earlier O.A.No.786 of 2023 (PB)) - reg.

The Orders of the Hon'ble NGT SZ in OA 42 of 2024 SZ and the paper cuttings based on which the Suo motu case was taken by Hon'ble NGT PB are attached. The matter is related to encroachments in River Kallai, Kozhikode, in which Board has been directed to file its report. The report has to be filed before the next posting on 25-07-2024. The Environmental Engineer, District Office, Kozhikode is hereby authorized to represent Kerala State Pollution Control Board in O.A. No.42 of 2024 (SZ) (Earlier O.A.No.786 of 2023 (PB)) before the Hon'ble NGT Southern Zone.

For and on behalf of the
KERALA STATE POLLUTION CONTROL BOARD

Shree A.J.

MEMBER SECRETARY

Enclosure: as above

To

The Environmental Engineer
District Office,
Kozhikode

Copy to:

1. Adv. Rema Smrithi V.K.
No.2, Temple Glade Apartments
Kalakshetra Colony
Beach Road
Besant Nagar
Chennai – 600090
2. The Senior Environmental Engineer,
Legal Cell, Ernakulam
3. Assistant Environmental Engineer-1,
KSPCB Head Office,
Trivandrum.

Item No.09:**BEFORE THE NATIONAL GREEN TRIBUNAL
SOUTHERN ZONE, CHENNAI**

(Through Video Conference)

Original Application No.42 of 2024(SZ)

Earlier O.A. No. 786 of 2023(PB)

IN THE MATTER OF:

Tribunal on its own motion **SUO MOTU** based on
the news item in The Hindu dt:11.12.2023 titled
**"Clear encroachments on Kallai to prevent
Chennai-like situation : Committee"**.

Date of hearing: 25.03.2024.

CORAM:

HON'BLE Smt. JUSTICE PUSHPA SATHYANARAYANA, JUDICIAL MEMBER

HON'BLE Dr. SATYAGOPAL KORLAPATI, EXPERT MEMBER

For Applicant(s): Suo Motu.

For Respondent(s): Mr. G. Vignesh represented
Mr. E.K. Kumaresan for the State of Kerala.
Mrs. V.K. Rema Smrithi for Kerala SPCB.

ORDER

1. The above case has been Suo Motu registered by the Principal Bench of the National Green Tribunal, New Delhi as Original Application No.786 of 2023 (PB) based on the news item published in The Hindu dated 11.12.2023 titled "Clear encroachments on Kallai to prevent Chennai-like situation : Committee" which has been transferred to this Bench and renumbered as Original Application No.42 of 2024(SZ).
2. As the matter relates to the Kallai River which is situated in the State of Kerala, let the Registry implead the concerned authorities of the State of Kerala as respondents in this proceeding.
3. The learned counsel Mr. G. Vignesh representing Mr. E.K. Kumaresan accepts notice on behalf of the State of Kerala and Mrs. V.K. Rema Smrithi accepts notice on behalf of the Kerala SPCB.
4. Post the matter on 20.05.2024.

Sd/-

Smt. Justice Pushpa Sathyanarayana, JM

Sd/-

Dr. Satyagopal Korlapati, EM

O.A. No.42/2024(SZ)
25th March, 2024. Mn.

Item No. 01

Court No. 1

**BEFORE THE NATIONAL GREEN TRIBUNAL
PRINCIPAL BENCH, NEW DELHI**

Original Application No. 786/2023

In re: News item appearing in The Hindu Bureau dated 11.12.2023 titled
**"Clear encroachments on Kallai to prevent Chennai-like
situation: committee"**

Date of hearing: 10.01.2024

**CORAM: HON'BLE MR. JUSTICE PRAKASH SHRIVASTAVA, CHAIRPERSON
HON'BLE MR. JUSTICE ARUN KUMAR TYAGI, JUDICIAL MEMBER
HON'BLE DR. AFROZ AHMAD, EXPERT MEMBER**

ORDER

1. This original application is registered in *suo motu* exercise of power on the basis of the news item titled **"Clear encroachments on Kallai to prevent Chennai-like situation: committee"**. As per the said news item, the reason for waterlogging in Chennai city has been traced back to the poor flow of water in Kallai river. The news item states that encroachments on the banks of Kallai river are continuing and on account of encroachment and silt accumulation at the bottom of the river, the flood is being caused and to prevent it there is need to clear the encroachment. As per the report, even a mild rain causes water logging in the city, therefore, clearing encroachments and restoring normal flow of the river is the need of the hour.

2. The news item raises substantial issue relating to compliance of the environmental laws.

3. The power of the Tribunal to take up the matter in *suo motu* has been recognized by the Hon'ble Supreme Court in the matter of

"Municipal Corporation of Greater Mumbai vs. Ankita Sinha & Ors."
reported in 2021 SCC Online SC 897.

4. In the circumstances of the case, we deem it proper to implead following as respondents in the matter:

- i. Water Resources Department, Govt. of Tamil Nadu through its Secretary.
- ii. State Disaster Management Authority, Tamil Nadu.
- iii. Tamil Nadu Pollution Control Board through its Member Secretary.
- iv. Principal Secretary, Environment and Forest Department, Tamil Nadu.

5. Let notice be issued to the above respondents for filing their response before the concerned Bench of the Tribunal.

6. Since the matter relates to the Southern Zone Bench, Chennai, therefore, the OA is transferred to the said bench for appropriate further action. The Registry is directed to transfer the original record of this OA to Southern Zone Bench.

Prakash Shrivastava, CP

Arun Kumar Tyagi, JM

Dr. Afroz Ahmad, EM

January 10, 2024
Original Application No. 786/2023
DV

Item No.10:**BEFORE THE NATIONAL GREEN TRIBUNAL
SOUTHERN ZONE, CHENNAI**

(Through Video Conference)

Original Application No.42 of 2024(SZ)
Earlier O.A. No. 786 of 2023(PB)

IN THE MATTER OF:

Tribunal on its own motion **SUO MOTU**
based on the News Item in The Hindu
Bureau dt:11.12.2023 titled "Clear
encroachments on kallai to prevent
Chennai like situation : Committee".

And

Environment and Forest Department,
Govt. of Tamil Nadu,
Rep by its Principal Secretary,
and ors.

...Respondent(s)

Date of hearing: 20.05.2024.

CORAM:

HON'BLE Smt. JUSTICE PUSHPA SATHYANARAYANA, JUDICIAL MEMBER

HON'BLE Dr. SATYAGOPAL KORLAPATI, EXPERT MEMBER

For Applicant(s): Suo Motu.

For Respondent(s): Ms. Mokshavathy represented
Mr. E.K. Kumaresan for R1 to R3.
Mrs. Rema Smrithi for R4.

ORDER

1. For filing the reports of the respondents, post the matter on 25.07.2024.

Sd/-

Smt. Justice Pushpa Sathyanarayana, JM

Sd/-

Dr. Satyagopal Korlapati, EM

O.A. No.42/2024(SZ)
20th May, 2024.AD.

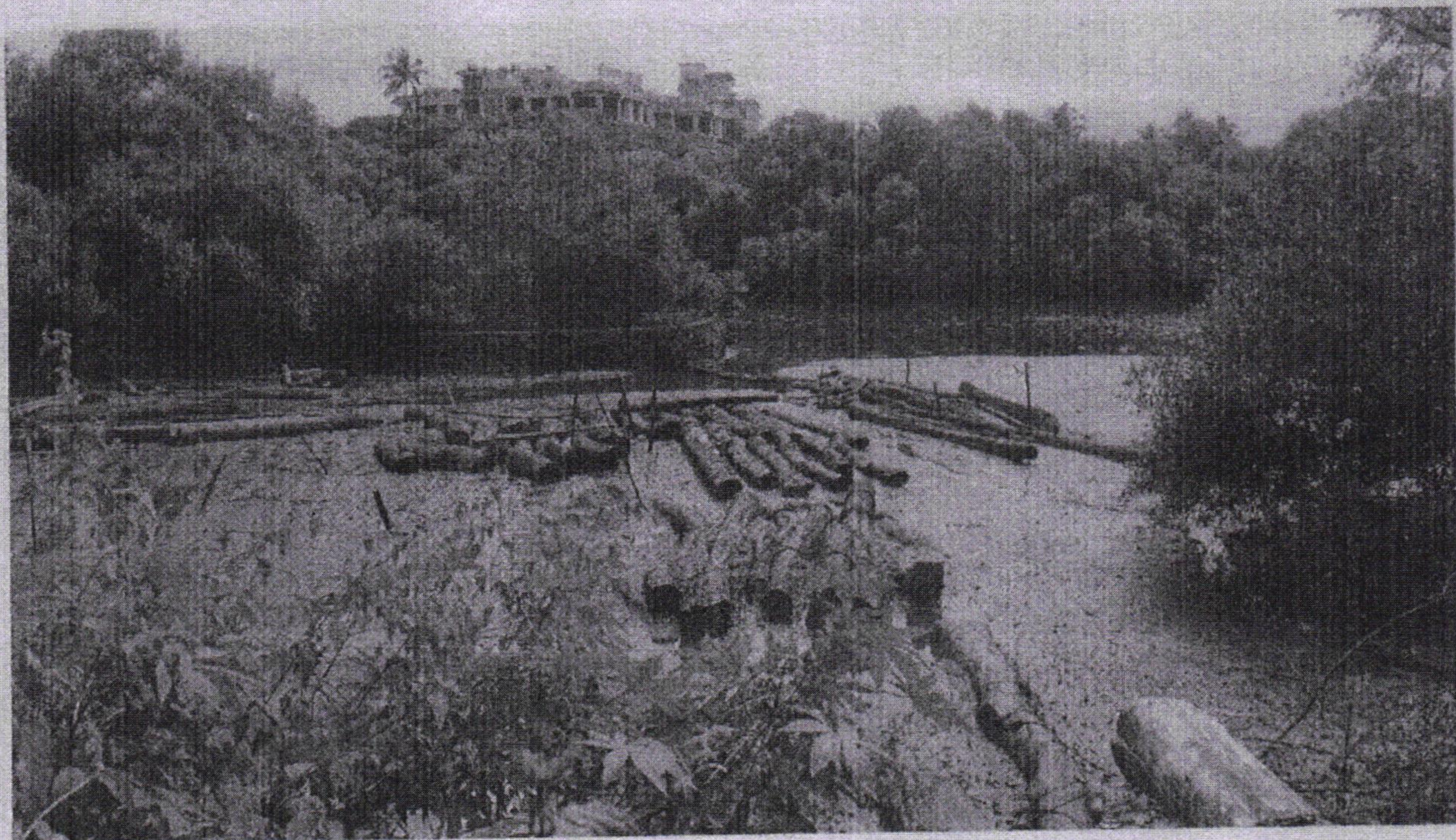


Clear encroachments on Kallai to prevent Chennai-like situation: committee

The reason for waterlogging in the city has been traced back to the poor flow of water in the Kallai river

Published - December 11, 2023 08:47 am IST - Kozhikode

THE HINDU BUREAU



Encroachments on the banks of the Kallai river continue unquestioned even after the Kerala High Court order of 2019 to clear all encroachments. | Photo Credit: K. Ragesh

Up until 2018, residents of Kozhikode were confident that no floods could touch them.

Regular waterlogging, especially in the heart of the city, has become the norm since then, and the reasons are often traced back to the Conolly Canal and the Kallai river that it empties into. Now, the floods in Chennai have brought the issue of the river back into focus, with environmentalists and local residents warning of a worse situation in Kozhikode if the natural flow of the Kallai is not restored.

Encroachments and silt accumulation at the bottom of the river have been under discussion for decades. A survey done a decade ago had revealed that at least 23.5 acres on both sides of the Kallai river had been encroached upon. However, the Kallai River Protection Committee that had approached Kerala High Court demanding that the encroachments be cleared, claimed that there

was more land that had not come under the survey.

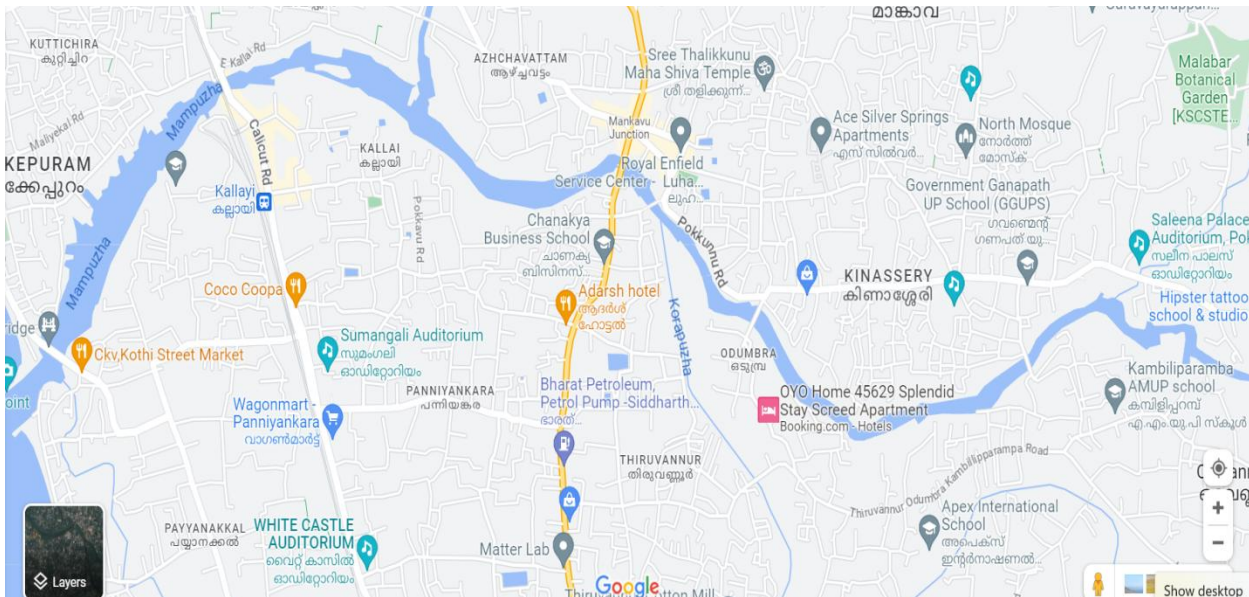
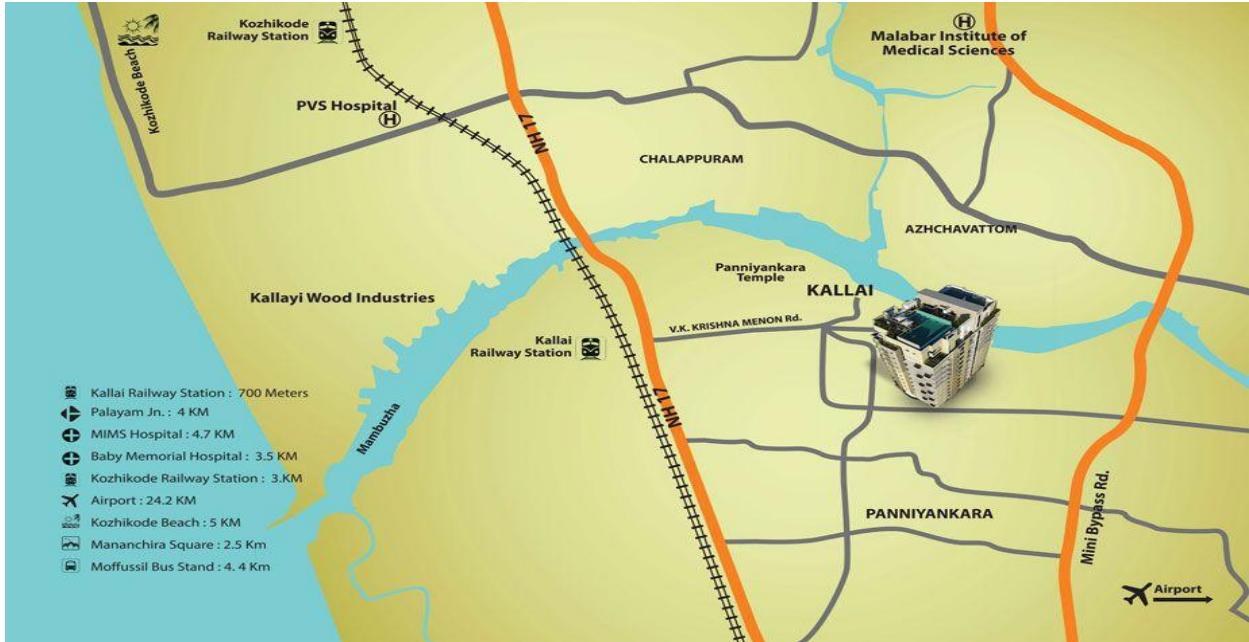
"The Kallai river is the only means by which water in the city, Conolly canal, and nearby areas is drained into the sea. At present, even a mild rain causes waterlogging in the city. If the rain stays for more days, the city, especially the low-lying areas, gets submerged. Clearing encroachments and restoring the normal flow of the river are the need of the hour," said Faisal Pallikkandy, general secretary of the committee.

Besides filling parts of the river to attach them to the land, large areas of revenue land, which was being used by private individuals under lease from the government, supposedly for timber business, was encroached upon. Some have even faked documents to sell off the land. "The encroachers who have approached the Kerala High Court have hidden details regarding ownership of the land and have only appealed for an extension of their leases. Action should be taken against those who have made fake documents," Mr. Pallikkandy said, adding that the leases should not be renewed.

Meanwhile, desilting being carried out by the Irrigation department has not progressed beyond the tender stage. No agencies showed interest in the work for years, and the respondent to a recent tender quoted a higher amount than the sanctioned fund. If the negotiation with the agency does not work out, the project will have to be re-tendered.

ANNEXURE - II

GOOGLE MAP OF KALLAI RIVER -KOZHIKODE



23 ACTION PLAN FOR RIVER KALLAYI , KERALA

Format for submission of monthly progress report by state/UTs

(Hon'ble NGT in the matter of OA.No.673/2018dated6/12/2018) For the month of

SEPTEMBER 2024– Kallayi polluted river stretch

Kozhikode Corporation			
No.	Activity	Status	Remarks
1	Identification of illegal outlets into storm water drain and issue Notice to such units	Continuing random inspections and imposing fine regularly	On going
2	Waste to energy project proposed at Njeliyamparamba	Project dropped	Project dropped

3	Establishment of Aerobic compost units	Completed and functioning.	Completed
4	Segregation of solid waste at source-level and treatment of household wastes	Completed (100% coverage)	Completed
5	Setting up of rendering treatment plant for chicken stall wastes	Rendering plant installed in Thamarassery Panchayath(Fresh cut rendering plant).Chicken waste generated from chicken stalls under Kozhikode corporations are being transported to rendering plant at Thamarassery. 217chicken stall handed over the chicken waste in in to fresh cut rendering plant (100%Coverage)	Functioning
6	Implementation of Green protocol unit	On going	On going
7	Setting up of common STP of (13MLD) (6 MLD At Kothi bridge)&(7 MLD At Avikkal	Project dropped due to Public protest and court cases.	Project dropped.
8	Implementation of 27 MLD STP at Kottoli(Sarovaram)	After receivingCouncil approval, the project was submitted to the Government for Administrative sanction. The AS was deferred and directed to revise the proposal to increase the number of	27 MLDSTP with 220 KLD FSTP as co- treatment with 54 km network

		connections. KWA is revising the proposal. The administrative sanction for constructing a 27MLD STP at Kottoli(Sarovaram) was received on 08.01.2024. Technical sanctions pending with the KWA	
9	Cleaning of Canoli canal	Periodical cleaning	Continuous - seasonal
10	Purchasing of Solar Boat for Canoli canal cleaning	Project dropped	Project dropped
11	Installation of CCTV Camera for the Identification and monitoring of illegal activities	On going	On going
12	Establishment of Mobile Septage Units	Project dropped	Project dropped
13	Action taken against dumping of wastes into river and public places	Continuing random inspections and imposing fine regularly	Continuous
14	Cleaning of B.K canal	Completed	Completed
15	Establishment of treatment plant at Medical college (3MLD plant) 15.1-2 MLD plant propose 15.2-1 MLD plant proposed	Completed	Completed and functioning

16	Construction of drains at Y.M.RC Ayyankarcolony	26 % coverage	Progressing
17	Provide facility for MRF,RRF,Super MRF Three units existing 19.1 Njeliyanparamb 19.2 Industrial estate 19.3 Mayor Bhavan jayanthi nagar colony	3.MRF and 5.MCF are already existing. New project going on.	New project under consideration
18	Identification of illegal outlets from house to storm water drain and issue Notice to such Houses	On going - Continuous process	Continuous
19	Establishment of Plastic shredding unit	<i>Project started</i>	
20	Establishment of slaughtering unit	Project under Consideration	Project under Consideration
21	Cleaning of drains in Kozhikode Town	On going - Continuous process	Continuous

Perumanna Grama Panchayath

No	Activity	Implementing agency	Status	Remarks
1	Outlets into storm Water drain and issue notice	Perumanna Panchayat, kozhikode	Inspection conducting regularly	Continuous
2	Establishment of six aerobic compost units in panchayat	Perumanna Panchayat , Kozhikode through MGNREGS	Work completed(100% coverage)	Completed
3	Collection and segregation of solid waste in the river	Perumanna Panchayat	Work completed	Completed
4	Setting up of 360 soak pit plant in all houses near the river area and panchayat	Perumanna Panchayat through MGNREGS	70% completed	Progressing
5	Implementation of 360 compost unit near river side and panchayat	Perumanna Panchayat , Kozhikode through MGNREGS	70% completed	Progressing
6	Implementation of water flow project (Aluvangal Thazham Perumbatta Elamanapadam, Valiyapadam.	Perumanna Panchayat	Technical sanction obtained. Tender procedure completed.	

	Mampuzhthode Naveekarana, project no 260/2021 project cost 16.67 Lakhs).			
8	Cleaning of Mambuzha river (project name : Mambuzha water flow restoration, project no 01/2018-19	District Panchayat , Kozhikode	Work has been completed by District Panchayat, Kozhikode	Completed
9	Establishment of 18 nos of mini MCF in different wards including Payyadi methal where the river is flowing	Perumanna Panchayat , Kozhikode through MGNREGS	Completed.	Completed.
10	Collection of plastic Waste from the river	Perumanna Panchayat	Process will be done every year	Continuous

29 Peruvayal Grama Panchayath

No	Activity	Implementing agency	Status	Remarks
1	Outlet in storm water drain and issued notice	Peruvayal G P	Continuous process (Ongoing)	Continuous
2	Establishment of 56 units anaerobic composed unit in panchayat.	Peruvayal GP through MGNREGS	Continuous process (Ongoing)	Continuous
3	Setting up of 379 soak pit plant in all houses	Peruvayal G P	On going	Nearly completion
4	Cleaning of Mambuzha river (Mambuzha renovation) project no :190/2017-18	District panchayat Kozhikode	Completed	Completed
5	Establishment of 8 numbers of mini MCF	Peruvayal GP through MGNREGS	As of now 6 mini MCF completed. No further progress reported	

6	Collection of plastic waste from the river	Peruvayal GP	Work completed(100%coverage)	Completed
7	Collection and segregation of solid waste in the river	Peruvayal GP	On going	On going
8	Establishment of Bio gas plant	Peruvayal GP	Work completed(70% coverage) . No further progress reported .	Completed
10	Well recharge	Peruvayal GP through MGNREGS	Work completed(60% coverage) . No further progress reported	Completed

Mavoor Grama Panchayat

No.	Activity	Implementing agency	Status	Remarks
1	Transportation of waste management to refinement unit	Konnari Advanced Polymers Limited	Completed	
2	Cleaning of Cherupuzha (Kuniyakadav to Thenghilakadav)	Mavoor GP	Completed	1500 mtr
3	Valayannor Thodu cleaning	MGNREGS	Completed	115 mtr
4	Arayancode kalchira Thodu Cleaning	MGNREGS	Completed	115 mtr
5	Vellaram Kandi Chirakkal thazham thodu	Mavoor GP	Completed	
6	Ring compost	Mavoor GP	Completed	
7	Kadayan thodu	MGNREGS	Completed	
8	Chalippadam Punchappadam thodu	MGNREGS	Completed	
9	Puthiyottil thazham Elaram thodu	MGNREGS	Completed	

32 OLAVANNA GRAMAPANCHAYAT

No	Activity	Implementing Agency	Status	Remarks
1	Collection of plastic waste from the river	Olavanna Gramapanchayat	Process continuing (96% coverage)	Continuous
2	Collection of segregation of solid waste in the river	Olavanna Gramapanchayat	Process continuing (96% coverage)	Continuous
3	Cleaning of Mambuzha river	Olavanna Gramapanchayat	Process continuing (93% coverage)	Continuous
4	Well recharge	Olavanna Gramapanchayat through MGNREGS	Completed	Completed
5	Setting up of soak pit in houses	Olavanna Gramapanchayat through MGNREGS	Completed.	Completed.
6	Action taken against dumping of waste in to river	Olavanna Gramapanchayat	Process continuing(95% coverage)	Continuous
7	Collection of non-biodegradable waste	Harith karma sena	Process continuing	Continuous

33 IRRIGATION DEPARTMENT

No	Activity	Status	Remarks
1	Desilting of Kallayi river from Kaduppini to Kothi in Kozhikode Corporation	Kozhikode municipal corporation deposited Rs. 790 lakhs for desilting Kallai river under urban agglomeration scheme on 06.03.2021. SHO on 12.09.2024 .	
2	Provide fencing on the sides of the Bridge	SHO on 22.08.2024 for providing chain linked fencing on Kothi bridge & SHO on 20.07.2024 for providing chain linked fencing for Mooriyad road bridge	
3	Dredging , Desilting & removal of weeds from E K canal(11.21 km)	Work entrusted to Kerala Waterways & Infrastructure Ltd (KWIL)	
4	Bio park in Kozhikode District	Land for the proposed bio park is to be demarcated by the Revenue authorities after necessary boundary survey and subsequent bio cover works are to be done by the Social Forestry Department	
5	Flood prone mapping in Kozhikode District	Action to be taken by the Hydrology Wing of Irrigation Department as this needs data collection, scientific analysis and modelling skills	

Kerala State Pollution Control Board

No. (as per Action Plan)	Activity	Status	Remarks
1	River water quality monitoring-Kallayi river National Water Quality Monitoring Programme (NWMP)	Process continuing	
2	River water quality monitoring-Kallayi rivers State Water Monitoring Programme,KSPCB fund(SWMP)	Process continuing	
3	Inspection and effluent quality monitoring of the flats,industrial units,service stations, hospitals, Hotels etc. In Malappuram Municipal area	Process continuing	

Suchitwa Mission 35

No. (as per Action Plan)	Activity	Implementing agency	Status	Remarks
1	Board displaying messages against dumping to be placed in river banks	Suchitwa Mission	Process continuing	

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Action Plan by Ground Water Department

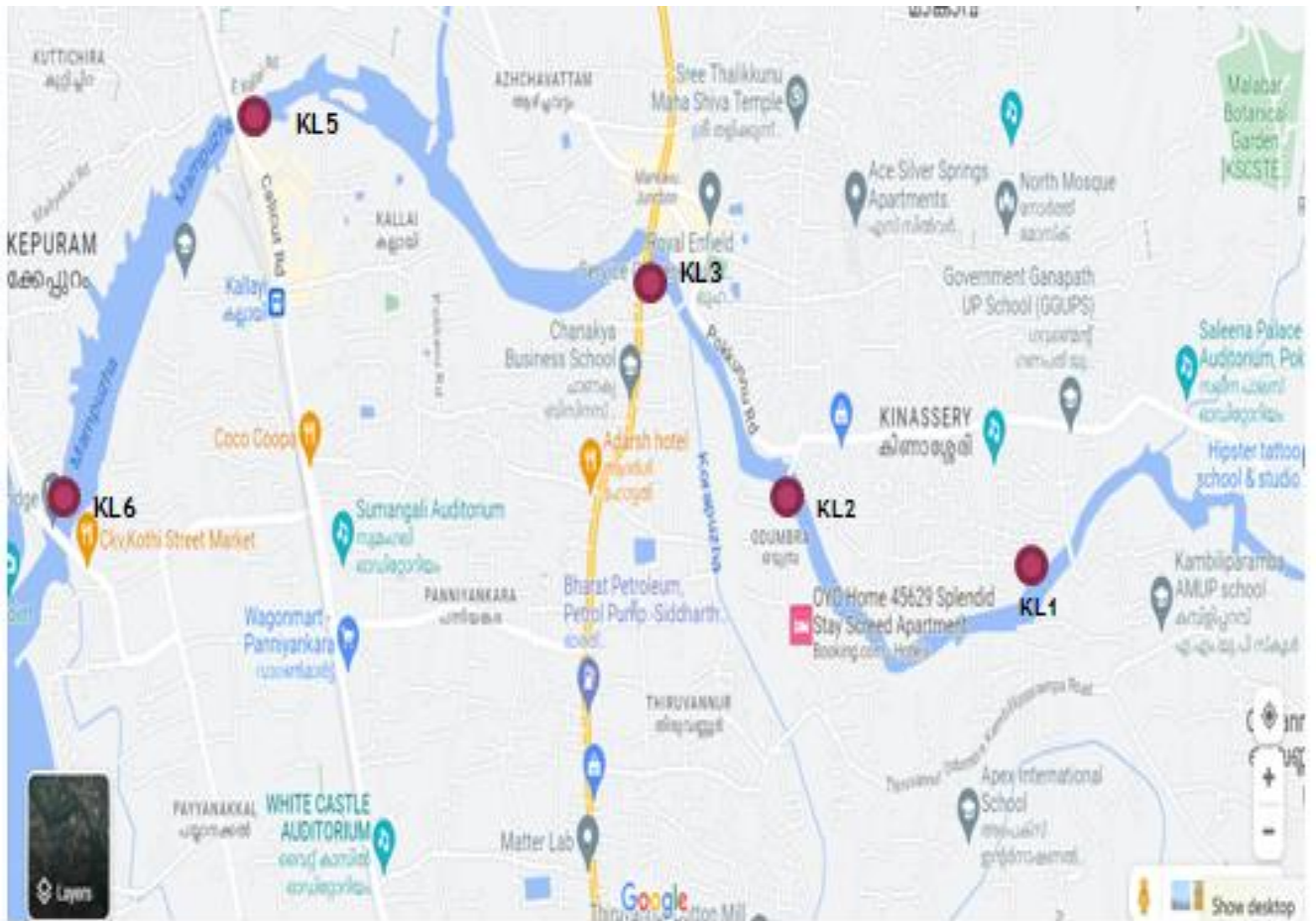
No. (as per Action Plan)	Activity	Status	Remarks
B(i)	Ground Water resources and regulation of ground water extraction by industries particularly in over exploited as critical zones / blocks	As per Ground water resources of Kerala,2017 estimate, Kozhikode Block comes under the Kallai river basin and the block is safe with stage of ground water Extraction 68.49%	
B(ii)	Ground water recharging/ rain water harvesting	The average pre - monsoon ground water level is 7.23 mbgl. Ground water Department has implemented 3 no of dug well recharge schemes at Kozhikode block	
B(iii)	Periodic ground waste quality assessment and remedial actions in case of contaminated ground water tube wells/ bore wells or hand pumps	Ground water Department has one observation Piezometer (BW) in the river stretch	
B(iv)	For regulating use of ground water for irrigation purpose, adopting good irrigation practices	The total irrigation draft in the Block area is 488.76 ha.m	

Action plan by irrigation Department

No. (as per Action Plan)	Activity	Status	Remarks
E	Dredging and desilting	Kozhikode municipal corporation deposited Rs. 790 lakhs for desilting Kallai river under urban agglomeration scheme on 06.03.2021. SHO on 12.09.2024 .	
E	E-flow (by micro water shed management)	Action to be taken by the hydrology wing of irrigation department as this needs data collection, scientific analysis and modeling skills. The matter has been communicated to the Hydrology wing Assistant Engineer at Kozhikode.	
E	Flood plain zone (protection and management)	Action to be taken by the hydrology wing of irrigation department. The matter has been communicated to the Hydrology wing.	
E	Greenery development (plant in trees on the banks)	Not reported	

ANNEXURE IV

SAMPLING POINTS 1 TO 5 - POLLUTED RIVERSTRETCH ACTION PLAN FOR KALLAI RIVER



ANNEXURE IV

1. KL-1. PALATHUM KANDI BRIDGE



2. KL-2 . KADUPPINI BRIDGE



ANNEXURE IV

3. KL-3. MANKAAVU BRIDGE



ANNEXURE IV

4. KL-5. KALLAI RAILWAY BRIDGE



ANNEXURE IV

5. KL-6. KOTHI BRIDGE –THEKKEPPURAM





VARIATION OF BIOLOGICAL OXYGEN DEMAND (BOD) IN 2023
 ANALYSIS REPORT OF AMBIENT WATER (JANUARY-DECEMBER 2023)

sl no	MONTHS	STATIONS						
		KL 1	KL 2	KL 3	KL 5	KL 6	3461	5224
1	JANUARY	2.54	2.34	5.54	3.74	0.5	3	5.04
2	FEBRUARY	1.6	1.8	1.9	5	1.2	3.2	4.2
3	MARCH	19.2	7	4.6	4.4	3	1.4	3
4	APRIL	5.4	5.6	12.8	8	1.8	1.74	9.2
5	MAY	10.68	10.08	9.88	12.88	4.68	3	12.28
6	JUNE	4.8	3.8	4	4	2	2.2	4.2
7	JULY	3.28	2.0	3.08	3.28	2.0	2.0	3.28
8	AUGUST	2.4	2.5	2	2.4	2	2.2	2.9
9	SEPTEMBER	3.05	3.07	3.07	3.27	3.05	3.47	3.5
10	OCTOBER	2.4	4.8	3.4	4.8	3.4	2.87	3.6
11	NOVEMBER	4.5	4.6	4.6	4.8	1.4	2.4	3.5
12	DECEMBER	2.8	2.4	2.2	2	1.1	0.27	3.4

Test method variation: None

- KL1 -KALLAI RIVER AT PALATHUMKANDI BRIDGE, POKKUNNU
- KL2 -KALLAI RIVER AT KADUPPINI BRIDGE
- KL3 -KALLAI RIVER AT MANKAVU BRIDGE
- KL5 -KALLAI RIVER AT KALLAI RAILWAY BRIDGE
- KL6 -KALLAI RIVER AT KOTHI BRIDGE, THEKKEPURAM
- 3461- CANOLI CANAL AT ERANJIKKAL (AT KORAPPUZHA)-NWMP STATION
- 5224- CANOLI CANAL AT MOORIYAD (AT KALLAI RIVER INTERSECTION)-NWMP STATION



VARIATION OF CONDUCTIVITY (EC) IN 2023
 ANALYSIS REPORT OF AMBIENT WATER (JANUARY-DECEMBER 2023)

sl no	MONTHS	STATIONS						
		KL 1	KL 2	KL 3	KL 5	KL 6	3461	5224
1	JANUARY	20100	27230	30240	33060	44100	21350	28980
2	FEBRUARY	20540	24440	25890	31990	40940	34990	31400
3	MARCH	28220	33110	35640	54100	57090	59040	48200
4	APRIL	25530	27270	28200	35930	56180	46650	33980
5	MAY	28950	30482	29635	34060	24766	51035	63450
6	JUNE	6130	4025	5348	16180	49104	31460	7810
7	JULY	315	360	395	580.4	522.5	1011	305
8	AUGUST	2104	3430	4750	23240	29980	3207	14210
9	SEPTEMBER	163.9	203.7	20.6	467.1	647.3	18900	452
10	OCTOBER	296	498.6	600.6	24810	41620	1770	5105
11	NOVEMBER	4330	11660	13450	26150	39300	8250	23100
12	DECEMBER	43170	16660	17680	29550	41930	15350	16910

Test method variation: None

KL1 -KALLAI RIVER AT PALATHUMKANDI BRIDGE, POKKUNNU

KL2 -KALLAI RIVER AT KADUPPINI BRIDGE

KL3 -KALLAI RIVER AT MANKAVU BRIDGE

KL5-KALLAI RIVER AT KALLAI RAILWAY BRIDGE

KL6 -KALLAI RIVER AT KOTHI BRIDGE, THEKKEPURAM

3461- CANOLI CANAL AT ERANJIKKAL (AT KORAPPUZHA)-NWMP STATION

5224- CANOLI CANAL AT MOORIYAD (AT KALLAI RIVER INTERSECTION)-NWMP STATION



VARIATION OF DISSOLVED OXYGEN (DO) IN 2023
 ANALYSIS REPORT OF AMBIENT WATER (JANUARY-DECEMBER 2023)

sl no	MONTHS	STATIONS						
		KL 1	KL 2	KL 3	KL 5	KL 6	3461	5224
1	JANUARY	4.47	5.27	7.4	5.2	6.07	4.53	4.27
2	FEBRUARY	6.47	5	4.6	3.53	5.3	4.7	4.07
3	MARCH	5.6	4.13	1.93	3.93	5.07	6.47	4.4
4	APRIL	6.2	4.2	4.3	4.6	5.5	5.4	3.3
5	MAY	2.2	2.7	2.7	0.4	1.1	4.9	NIL
6	JUNE	3.2	0.8	0.8	1.9	3.3	6.2	0.7
7	JULY	2.5	2.5	3.1	1.9	1.1	6.3	1.1
8	AUGUST	4.3	4.7	5.1	4.4	7	4.6	3.1
9	SEPTEMBER	2.9	2.8	2.7	2	2.9	2.1	1.1
10	OCTOBER	3.5	2.7	2.3	1.9	1.7	7.3	4.1
11	NOVEMBER	2.93	2.8	2.73	1.8	5.93	4.9	1.3
12	DECEMBER	37.4	3.3	3.7	4.1	5.7	7.4	1.5

Test method variation: None

KL1 -KALLAI RIVER AT PALATHUMKANDI BRIDGE, POKKUNNU

KL2 -KALLAI RIVER AT KADUPPINI BRIDGE

KL3 -KALLAI RIVER AT MANKAVU BRIDGE

KL5 -KALLAI RIVER AT KALLAI RAILWAY BRIDGE

KL6 -KALLAI RIVER AT KOTHI BRIDGE, THEKKEPURAM

3461- CANOLI CANAL AT ERANJIKKAL (AT KORAPPUZHA)-NWMP STATION

5224- CANOLI CANAL AT MOORIYAD (AT KALLAI RIVER INTERSECTION)-NWMP STATION



VARIATION OF FECAL COLIFORMS (FC) IN 2023
 ANALYSIS REPORT OF AMBIENT WATER (JANUARY-DECEMBER 2023)

sl no	MONTHS	STATIONS						
		KL 1	KL 2	KL 3	KL 5	KL 6	3461	5224
1	JANUARY	8000	6000	7000	75000	300	500	45000
2	FEBRUARY	5000	5000	14000	30000	60	700	40000
3	MARCH	1900	31000	4000	20000	120	500	6200
4	APRIL	1400	1600	1700	50000	2100	160	150000
5	MAY	600	100	200	50000	2800	120	200000
6	JUNE	11000	90000	65000	100000	10000	1200	190000
7	JULY	4900	5800	15000	58000	90000	2500	110000
8	AUGUST	17000	65000	71000	350000	390000	1800	480000
9	SEPTEMBER	10000	1200	1800	1900	2100	2600	200000
10	OCTOBER	10000	22000	31000	410000	220	700	100000
11	NOVEMBER	6000	9000	13000	21000	9000	1100	130000
12	DECEMBER	10000	15000	18000	28000	2000	8000	300000

Test method variation: None

- KL1 -KALLAI RIVER AT PALATHUMKANDI BRIDGE, POKKUNNU
- KL2 -KALLAI RIVER AT KADUPPINI BRIDGE
- KL3 -KALLAI RIVER AT MANKAVU BRIDGE
- KL5 -KALLAI RIVER AT KALLAI RAILWAY BRIDGE
- KL6 -KALLAI RIVER AT KOTHI BRIDGE, THEKKEPURAM
- 3461- CANOLI CANAL AT ERANJIKKAL (AT KORAPPUZHA)-NWMP STATION
- 5524- CANOLI CANAL AT MOORIYAD (AT KALLAI RIVER INTERSECTION)-NWMP STATION



KERALA STATE POLLUTION CONTROL BOARD

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VARIATION OF FECAL STREPTOCOCCUS (FS) IN 2023
ANALYSIS REPORT OF AMBIENT WATER (JANUARY-DECEMBER 2023)

sl no	MONTHS	STATIONS						
		KL 1	KL 2	KL 3	KL 5	KL 6	3461	5224
1	JANUARY	100	120	110	1060	20	70	460
2	FEBRUARY	240	300	260	360	40	20	120
3	MARCH	240	560	240	640	20	80	120
4	APRIL	150	170	160	3000	1020	70	16000
5	MAY	120	40	50	7000	160	10	14000
6	JUNE	120	900	1000	3000	80	150	6000
7	JULY	4900	5800	15000	58000	9000	240	1120
8	AUGUST	17000	65000	71000	350000	390000	40	3000
9	SEPTEMBER	1000	1200	1800	1900	2100	90	3500
10	OCTOBER	600	800	1000	1100	30	10	1300
11	NOVEMBER	200	400	1100	2100	700	40	1900
12	DECEMBER	700	900	1100	800	100	430	4400

Test method variation: None

KL1 -KALLAI RIVER AT PALATHUMKANDI BRIDGE, POKKUNNU

KL2 -KALLAI RIVER AT KADUPPINI BRIDGE

KL3 -KALLAI RIVER AT MANKAVU BRIDGE

KL5 -KALLAI RIVER AT KALLAI RAILWAY BRIDGE

KL6 -KALLAI RIVER AT KOTHI BRIDGE, THEKKEPURAM

3461- CANOLI CANAL AT ERANJIKKAL (AT KORAPPUZHA)-NWMP STATION

5224- CANOLI CANAL AT MOORIYAD (AT KALLAI RIVER INTERSECTION)-NWMP STATION





VARIATION OF PH IN 2023
 ANALYSIS REPORT OF AMBIENT WATER (JANUARY-DECEMBER 2023)

sl no	MONTHS	STATIONS						
		KL 1	KL 2	KL 3	KL 5	KL 6	3461	5224
1	JANUARY	7.08	7.38	7.55	7.79	7.95	7.56	7.32
2	FEBRUARY	7.18	7.31	7.34	7.45	7.95	7.37	7.42
3	MARCH	6.93	7.38	7.49	7.86	7.9	7.26	7.74
4	APRIL	7.58	7.61	7.79	7.5	7.9	7.61	7.28
5	MAY	7.78	7.73	7.76	7.27	7.36	7.38	7.28
6	JUNE	6.81	6.87	6.89	6.8	7.18	7.05	7.09
7	JULY	6.61	6.67	6.63	6.56	6.67	7.03	6.74
8	AUGUST	6.71	6.82	6.92	7.32	7.68	6.64	7.34
9	SEPTEMBER	6.4	6.45	6.47	6.78	6.89	6.61	6.8
10	OCTOBER	6.65	6.75	6.95	7.59	7.71	7.13	6.87
11	NOVEMBER	6.95	6.86	6.98	7.38	7.91	6.6	7
12	DECEMBER	6.68	6.79	6.94	7.32	7.95	6.65	6.66

Test method variation: None

- KL1 -KALLAI RIVER AT PALATHUMKANDI BRIDGE, POKKUNNU
- KL2 -KALLAI RIVER AT KADUPPINI BRIDGE
- KL3 -KALLAI RIVER AT MANKAVU BRIDGE
- KL5 -KALLAI RIVER AT KALLAI RAILWAY BRIDGE
- KL6 -KALLAI RIVER AT KOTHI BRIDGE, THEKKEPURAM
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- 5224- CANOLI CANAL AT MOORIYAD (AT KALLAI RIVER INTERSECTION)-NWMP STATION



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VARIATION OF TOTAL COLIFORMS (TC) IN 2023
ANALYSIS REPORT OF AMBIENT WATER (JANUARY-DECEMBER 2023)

sl no	MONTHS	STATIONS						
		KL 1	KL 2	KL 3	KL 5	KL 6	3461	5224
1	JANUARY	15000	14000	10000	110000	500	1300	60000
2	FEBRUARY	5000	5000	14000	30000	60	900	50000
3	MARCH	3100	40000	6000	30000	160	1700	12000
4	APRIL	3200	4500	5600	130000	5000	480	430000
5	MAY	1300	300	500	90000	4500	360	400000
6	JUNE	30000	120000	95000	180000	40000	3600	260000
7	JULY	12000	10000	29000	92000	122000	3800	144000
8	AUGUST	22000	78000	81000	470000	60000	2600	600000
9	SEPTEMBER	10000	20000	70000	70000	180000	4200	290000
10	OCTOBER	14000	34000	48000	520000	400	1100	140000
11	NOVEMBER	11000	24000	37000	46000	190000	1600	280000
12	DECEMBER	25000	20000	46000	42000	8000	9000	460000

Test method variation: None

KL1 -KALLAI RIVER AT PALATHUMKANDI BRIDGE, POKKUNNU

KL2 -KALLAI RIVER AT KADUPPINI BRIDGE

KL3 -KALLAI RIVER AT MANKAVU BRIDGE

KL5 -KALLAI RIVER AT KALLAI RAILWAY BRIDGE

KL6 -KALLAI RIVER AT KOTHI BRIDGE, THEKKEPURAM

3461- CANOLI CANAL AT ERANJIKKAL (AT KORAPPUZHA)-NWMP STATION

5224- CANOLI CANAL AT MOORIYAD (AT KALLAI RIVER INTERSECTION)-NWMP STATION



VARIATION OF BOD IN 2024

ANALYSIS REPORT OF AMBIENT WATER (JANUARY - SEPTEMBER) 2024

SL NO	MONTHS	STATIONS						
		KL 1	KL 2	KL 3	KL 5	KL 6	3461	5224
1	JANUARY	4.2	3.8	3.2	4.4	2.47	3.6	4
2	FEBRUARY	3.6	2.87	3.8	4.07	1.87	2.13	4
3	MARCH	1.2	3.1	2.4	3.7	2.8	2.53	1.87
4	APRIL	1.7	2.13	4	4.13	1.87	2.4	4.3
5	MAY	2	2.53	2.4	3.2	2.8	2.2	1.87
6	JUNE	3.1	3.33	2.93	5.53	4.43	3.53	4.13
7	JULY	1.3	1.47	0.07	1.27	2.87	5.27	0.67
8	AUGUST	1	1	1.8	2	1.2	2.07	0.2
9	SEPTEMBER	1.1	0.87	1.07	0.87	2.47	3.2	4.07

Test method variation: None

- KL1 -KALLAI RIVER AT PALATHUMKANDI BRIDGE, POKKUNNU
- KL2 -KALLAI RIVER AT KADUPPINI BRIDGE
- KL3 -KALLAI RIVER AT MANKAVU BRIDGE
- KL5-KALLAI RIVER AT KALLAI RAILWAY BRIDGE
- KL6 -KALLAI RIVER AT KOTHI BRIDGE, THEKKEPURAM
- 3461- CANOLI CANAL AT ERANJIKKAL (AT KORAPPUZHA)-NWMP STATION
- 5224- CANOLI CANAL AT MOORIYAD (AT KALLAI RIVER INTERSECTION)-NWMP STATION





VARIATION OF DO IN 2024

ANALYSIS REPORT OF AMBIENT WATER (JANUARY - SEPTEMBER) 2024

SL NO	MONTHS	STATIONS						
		KL 1	KL 2	KL 3	KL 5	KL 6	3461	5224
1	JANUARY	3.5	5.3	5.8	0.7	6.6	2.4	5.5
2	FEBRUARY	4.1	4.7	4.1	3.9	6.5	5.3	1.3
3	MARCH	7.9	5.3	6.1	5.1	5.5	6.3	7.7
4	APRIL	4.1	3.7	1.6	2.5	5.9	3.8	2.33
5	MAY	5.1	3.1	3.3	1.3	2.2	4.7	5.3
6	JUNE	1.9	2.3	2.4	1.1	2.5	6.3	1
7	JULY	4.4	4.1	2.6	3.1	4.7	8	2.1
8	AUGUST	4.2	4.3	3.7	3.4	3.4	5.9	1.6
9	SEPTEMBER	4.5	4.5	3.9	2.9	6.1	8	2.5

Test method variation: None

- KL1 -KALLAI RIVER AT PALATHUMKANDI BRIDGE, POKKUNNU
- KL2 -KALLAI RIVER AT KADUPPINI BRIDGE
- KL3 -KALLAI RIVER AT MANKAVU BRIDGE
- KL5-KALLAI RIVER AT KALLAI RAILWAY BRIDGE
- KL6 -KALLAI RIVER AT KOTHI BRIDGE, THEKKEPURAM
- 3461- CANOLI CANAL AT ERANJIKKAL (AT KORAPPUZHA)-NWMP STATION
- 5224- CANOLI CANAL AT MOORIYAD (AT KALLAI RIVER INTERSECTION)-NWMP STATION



VARIATION OF CONDUCTIVITY IN 2024

ANALYSIS REPORT OF AMBIENT WATER (JANUARY - SEPTEMBER) 2024

SL NO	MONTHS	STATIONS						
		KL 1	KL 2	KL 3	KL 5	KL 6	3461	5224
1	JANUARY	9475	17005	19017	28025	28064	6852	29900
2	FEBRUARY	19640	24170	26060	32770	42280	26320	29460
3	MARCH	33300	36680	34080	36940	52100	34300	51430
4	APRIL	27140	29760	29380	32120	42340	34900	31780
5	MAY	27200	30520	31200	37940	34510	45200	31880
6	JUNE	534.5	664.7	1303	6899	18780	7833	1356
7	JULY	224	417	411	1900	25700	850	650
8	AUGUST	128.9	134.3	164.5	219.1	296	548	235
9	SEPTEMBER	277	197.5	243	910	61500	1084	385

Test method variation: None

- KL1 -KALLAI RIVER AT PALATHUMKANDI BRIDGE, POKKUNNU
- KL2 -KALLAI RIVER AT KADUPPINI BRIDGE
- KL3 -KALLAI RIVER AT MANKAVU BRIDGE
- KL5-KALLAI RIVER AT KALLAI RAILWAY BRIDGE
- KL6 -KALLAI RIVER AT KOTHI BRIDGE, THEKKEPURAM
- 3461- CANOLI CANAL AT ERANJIKKAL (AT KORAPPUZHA)-NWMP STATION
- 5224- CANOLI CANAL AT MOORIYAD (AT KALLAI RIVER INTERSECTION)-NWMP STATION



VARIATION OF FECAL COLIFORMS IN 2024

ANALYSIS REPORT OF AMBIENT WATER (JANUARY - SEPTEMBER) 2024

SL NO	MONTHS	STATIONS						
		KL 1	KL 2	KL 3	KL 5	KL 6	3461	5224
1	JANUARY	200000	80000	80000	130000	600000	3500	400000
2	FEBRUARY	80000	60000	115000	135000	65000	300	195000
3	MARCH	30000	60000	80000	30000	10000	700	9000
4	APRIL	18000	100000	30000	28000	10000	700	2000
5	MAY	20000	30000	20000	12000	14000	300	24000
6	JUNE	7000	6000	40000	360000	350000	1300	370000
7	JULY	24000	33000	21000	90000	140000	1800	140000
8	AUGUST	3000	9000	10000	18000	25000	14000	28000
9	SEPTEMBER	10000	9000	2800	10000	30000	800	50000

Test method variation: None

- KL1 -KALLAI RIVER AT PALATHUMKANDI BRIDGE, POKKUNNU
- KL2 -KALLAI RIVER AT KADUPPINI BRIDGE
- KL3 -KALLAI RIVER AT MANKAVU BRIDGE
- KL5-KALLAI RIVER AT KALLAI RAILWAY BRIDGE
- KL6 -KALLAI RIVER AT KOTHI BRIDGE, THEKKEPURAM
- 3461- CANOLI CANAL AT ERANJIKKAL (AT KORAPPUZHA)-NWMP STATION
- 5224- CANOLI CANAL AT MOORIYAD (AT KALLAI RIVER INTERSECTION)-NWMP STATION



VARIATION OF FECAL STREPTOCOCCI IN 2024

ANALYSIS REPORT OF AMBIENT WATER (JANUARY - SEPTEMBER) 2024

SL NO	MONTHS	STATIONS						
		KL 1	KL 2	KL 3	KL 5	KL 6	3461	5224
1	JANUARY	6000	4000	3000	6000	16500	300	35000
2	FEBRUARY	6000	4500	8000	19500	1000	60	23000
3	MARCH	2000	6000	8000	2500	1000	50	800
4	APRIL	2500	12000	1000	1000	800	90	100
5	MAY	3700	2000	2900	1200	2200	90	3000
6	JUNE	500	1100	1000	800	900	80	300
7	JULY	350	1100	4100	2900	2400	400	1800
8	AUGUST	250	270	1200	30	3200	320	2400
9	SEPTEMBER	470	420	800	500	300	110	1200

Test method variation: None

- KL1 -KALLAI RIVER AT PALATHUMKANDI BRIDGE, POKKUNNU
- KL2 -KALLAI RIVER AT KADUPPINI BRIDGE
- KL3 -KALLAI RIVER AT MANKAVU BRIDGE
- KL5-KALLAI RIVER AT KALLAI RAILWAY BRIDGE
- KL6 -KALLAI RIVER AT KOTHI BRIDGE, THEKKEPURAM
- 3461- CANOLI CANAL AT ERANJIKKAL (AT KORAPPUZHA)-NWMP STATION
- 5224- CANOLI CANAL AT MOORIYAD (AT KALLAI RIVER INTERSECTION)-NWMP STATION



VARIATION OF pH IN 2024

ANALYSIS REPORT OF AMBIENT WATER (JANUARY - SEPTEMBER) 2024

SL NO	MONTHS	STATIONS						
		KL 1	KL 2	KL 3	KL 5	KL 6	3461	5224
1	JANUARY	6.6	6.9	7	7.3	7.4	6.56	6.9
2	FEBRUARY	6.81	7.1	7.25	7.37	7.74	6.85	7.23
3	MARCH	7.05	7.44	7.57	7.65	7.92	6.59	7.75
4	APRIL	6.84	7.07	7.08	7.17	7.48	6.64	7.24
5	MAY	7.06	7.01	7.04	6.94	6.97	6.9	6.9
6	JUNE	6.67	6.77	7.32	6.84	7.01	7.36	7.14
7	JULY	6.68	6.82	6.85	6.8	7.33	7.06	6.95
8	AUGUST	6.47	6.65	6.71	6.79	6.86	7.09	6.82
9	SEPTEMBER	6.67	6.67	6.75	6.82	7.71	6.82	7.63

Test method variation: None

- KL1 -KALLAI RIVER AT PALATHUMKANDI BRIDGE, POKKUNNU
- KL2 -KALLAI RIVER AT KADUPPINI BRIDGE
- KL3 -KALLAI RIVER AT MANKAVU BRIDGE
- KL5-KALLAI RIVER AT KALLAI RAILWAY BRIDGE
- KL6 -KALLAI RIVER AT KOTHI BRIDGE, THEKKEPURAM
- 3461- CANOLI CANAL AT ERANJIKKAL (AT KORAPPUZHA)-NWMP STATION
- 5224- CANOLI CANAL AT MOORIYAD (AT KALLAI RIVER INTERSECTION)-NWMP STATION





VARIATION OF TOTAL COLIFORMS (TC) IN 2024

ANALYSIS REPORT OF AMBIENT WATER (JANUARY - SEPTEMBER) 2024

SL NO	MONTHS	STATIONS						
		KL 1	KL 2	KL 3	KL 5	KL 6	3461	5224
1	JANUARY	250000	180000	180000	210000	1020000	5700	720000
2	FEBRUARY	215000	205000	245000	265000	120000	600	285000
3	MARCH	50000	100000	170000	70000	12000	800	29000
4	APRIL	27000	170000	40000	35000	44000	900	7800
5	MAY	30000	60000	30000	19000	20000	400	80000
6	JUNE	20000	50000	80000	400000	500000	2500	570000
7	JULY	26000	36000	35000	170000	210000	3900	180000
8	AUGUST	20000	17000	20000	55000	29000	28000	380000
9	SEPTEMBER	20000	20000	10000	40000	80000	2600	130000

Test method variation: None

- KL1 -KALLAI RIVER AT PALATHUMKANDI BRIDGE, POKKUNNU
- KL2 -KALLAI RIVER AT KADUPPINI BRIDGE
- KL3 -KALLAI RIVER AT MANKAVU BRIDGE
- KL5-KALLAI RIVER AT KALLAI RAILWAY BRIDGE
- KL6 -KALLAI RIVER AT KOTHI BRIDGE, THEKKEPURAM
- 3461- CANOLI CANAL AT ERANJIKKAL (AT KORAPPUZHA)-NWMP STATION
- 5224- CANOLI CANAL AT MOORIYAD (AT KALLAI RIVER INTERSECTION)-NWMP STATION