National Mission for Clean Ganga

Format for Submission of Monthly Progress Report by States/UTs

(Hon'ble NGT in the matter of OA No. 673/2018 dated06.12.2019)

<table>
<tr><th>Sl. No.</th><th>Activity to be monitored</th><th>Timeline</th><th>Submission of Progress by State/UT-Compliance Status</th></tr>
<tr><td>1.</td><td>Ensure 100% treatment of sewage at least in situ remediation</td><td>31.03.2021</td><td>

Total Sewage Generation in Kerala: 3759.28 MLD
Total Sewage Treatment capacity in the state through common STPs/FSTPs: More than 124.355 MLD(two STPs have not started working in full capacity)
Out of above, total septage treatment capacity in the State through common plants: 0.21 MLD
The sewage generated in the state is treated by septic tank - soak pit system or STP. Individual septic tank - soak pit systems are provided for households and small establishments. Individual STPs are provided for establishments such as flats, hotels, hospitals, etc. There is no open defecation in the state. Board with the co-ordination of LSGD & Water Resources Department has initiated to quantify the sewage which are treated via individual treatment system as mentioned above.
No. of functional common STPs in the state: 12
No. of functional common septage treatment plants in the state: 2
No. of common STP which has not started functioning: 1
No. of common FSTP which has not started functioning: 1

Details of existing STPs/Septage treatment plants in the State:
<table>
<tr><th>Sl. No.</th><th>City/Town</th><th>STP location</th><th>Status</th><th>STP Installed capacity</th><th>Utilization</th><th>Process</th></tr>
<tr><td>1</td><td>Thiruvananthapuram</td><td>Common Sewage Treatment Plant, Muttathara, Trivandrum Maintained by Kerala</td><td>Operational</td><td>107 MLD</td><td>70 MLD</td><td>ASP</td></tr>
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					Water Authority STP at Kumarichanda	Operational	10 KLD	10 KLD	Bio membrane bioreactor Technology
			2	Pathanamthitta	Sewage Treatment Plan at Sannidhanam (5MLD) Maintained by Travancore Devaswom Board	Seasonally Operated during festival season	5 MLD	3.5 MLD	UASB and SBR
					Sewage Treatment Plan at Pamba(3.5 MLD) Maintained by Travancore Devaswom Board	Seasonally Operated during festival season	3.5 MLD	3.5 MLD	Coagulation & settling
			3	Kottayam	STP for Houseboat (0.09 MLD) at Kumarakom Maintained by District Tourism Promotion Council, Kottayam	Operational	90 KLD	90 KLD	ASP
			4	Ernakulam	Sewage treatment unit, Kerala Water Authority, Elamkulam, Ernakulam(3 MLD)	Operational	4.5MLD	3 MLD	ASP
					STP owned by Greater Cochin Development Authority, Kadavanthra, Kochi (0.45 MLD)	Operational	0.45MLD	0.45 MLD	ASP

					Septage Tratment Plant at BrahmapuramKochi Corporation, Ernakulam	Operational	0.1MLD	0.1 MLD	MBBR
					Septage Tratment Plant at Wellington Island, Kochi Corporation	Operational	0.1MLD	0.1 MLD	MBBR
					STP at Kalamassery Market, Kalamassery Municipality	Operational	10 KLD	Just started operation	
			5	Kannur	Sewage treatment Plant at Taliparambu (0.5MLD) Taliparambu Municipality, Kannur	Operational	0.5MLD	0.5MLD	ASP
			6	Thrissur	Sewage treatment Plant at Guruvayur in Thrissur District	Commissioned	3 MLD	Not started functioning	ASP
					FSTP at Mattampuram	Completed. Not started functioning.	0.01 MLD	Not started functioning	BIOLOGICAL
			7	Malappuram	Sewage treatment Plant-atMalappuram Municipal Busstand	Operational	0.03 MLD	0.03 MLD	MBBR
					Sewage treatment Plant-at Tirur (fish market)	Operational	0.045 MLD	0.045 MLD	BIOLOGICAL

			8	Adimaly Grama Panchayat, Idukki	Sewage treatment Plant at Comfort station, Adimaly Grama Panchayat, Idukki	Operational	0.01 MLD	started functioning	Electro coagulation

Details of proposed STPs/FSTPs in the State:

Plant No.	Plant	Place	Capacity (MLD)	Status of the project	Funding Scheme	Process
1.	STP	Municipal Bus Stand, Tirur	0.05	Work on going. Civil work completed.	Fund is provided by Tirur municipality	Biological
2.	FSTP	Cherthala municipality, Alappuzha	0.25	Under technical scrutiny	Suchitwa Mission	Anaerobic baffled reactor and MBBR
3.	STP	Decentralised Sewerage Scheme - Thrissur Corporation	2.5	To be retendered	AMRUT - Implemented by ULB	Biological
4.	STP	Decentralised Sewerage System - Kochi Corporation Div-15	1.4	Tendered but not awarded	AMRUT - Implemented by ULB	Biological
5.	STP	Decentralised Sewerage System - Kochi Corporation Div-16	1.1	Tendered but not awarded	AMRUT - Implemented by ULB	Biological
6.	STP	Decentralised Sewerage System - Kochi Corporation Div-17	1.4	Tendered but not Awarded	AMRUT - Implemented by ULB	Biological

			7.	FSTP	Andamukkam, Kollam Corporation	0.1	Tendered but not Awarded	AMRUT - Implemented by ULB	Electro Coagulation
			8.	FSTP	Vasoorichira, Kollam Corporation	0.1	To be cancelled	AMRUT - Implemented by ULB	Electro Coagulation
			9.	FSTP	Karikkuzhi Ela, Kollam Corporation	0.1	To be cancelled	AMRUT - Implemented by ULB	Electro Coagulation
			10.	FSTP	Ramavarmapuram, Thrissur	0.1	Awarded but Agreement not executed	AMRUT - Implemented by ULB	Electro Coagulation
			11.	FSTP	Yakkara, Palakkad Municipality	0.1	Awarded but Agreement not Executed	AMRUT - Implemented by ULB	Electro Coagulation
			12.	FSTP	Chellora, Kannur Corporation	0.1	Agreement executed butnot Started	AMRUT - Implemented by ULB	Electro Coagulation
			13.	FSTP	Chakkumkandam, Guruvayur Municipality, Thrissur	0.1	Work started	AMRUT - Implemented by ULB	Electro Coagulation
			14& 15	Mobile Septage Units-2 nos.	Alappuzha municipality	0.01	Technical sanction to be issued	AMRUT - Implemented by ULB	Electro Coagulation

			16.	STP	General Hospital, Alappuzha	0.24	Tendered but not awarded	AMRUT - Implemented by ULB	Electro Coagulation
			17.	STP	ShatabdhiMandiram, Alappuzha	0.015	Technical sanction to be issued	AMRUT - Implemented by ULB	Biological
			18.	STP	Thottumadi Colony, Alappuzha	0.05	Technical sanction to be issued	AMRUT - Implemented by ULB	Biological
			19.	STP	General Hospital, Thrissur	0.36	Awarded but Agreement not Executed	AMRUT - Implemented by ULB	Electro Coagulation
			20.	STP	District Hospital, Palakkad	0.27	Awarded but Agreement not executed	AMRUT - Implemented by ULB	Electro Coagulation
			21.	STP	Sewage Treatment Plant & associated network at Sundaram Colony, Palakkad	0.8	Tendered but not Awarded	AMRUT - Implemented by ULB	Biological
			22& 23	STP (with Septage Treatment)	Sewage treatment plant at Medical College with Septage treatment, Kozhikode	2 MLD plant (with septage treatment) &1MLD plant	Work started	AMRUT - Implemented by ULB	Electro Coagulation
			24.	STP	Sewerage system in Zone A, Package B, Kothi, Kozhikode	6.0	To be retendered	AMRUT - Implemented by ULB	Biological

			25.	STP	Sewerage system in Zone A, Package A, AvikkalThodu, Kozhikode	7.0	To be retendered	AMRUT - Implemented by ULB	Biological
			26.	STP	Decentralised sewerage network with STP in old Kannur Municipal area, Kannur	1.0	Tendered but not awarded	AMRUT - Implemented by ULB	Biological
			27.	STP	STP at Medical College- Phase I & II, Thiruvanathapuram	5.0	Work started	AMRUT - Implemented byKerala Water Authority	Biological
			28.	STP	STP at Kureepuzha- Phase I & II, Kollam	12.0	Tendered but not awarded	AMRUT - Implemented byKerala Water Authority	Biological
			29.	STP	STP at Elamkulam, Kochi	5.0	Awarded but Agreement not executed	AMRUT - Implemented byKerala Water Authority	Biological

Status of STPs/FSTPs proposed in the action plan of polluted river stretches

District	River- Polluted River stretch	Local body	Details of STPs as per action plan	Status for the month of August
Kannur	Peruvamba – ALONG PERUVAMBA	Payyannur Municipality	Proposed 10 KLD STP at fish market, Perumbaby Payyannur Municipality	DPR is put up for approval

			Malappuram	Thirur-NADUVILANGADI TO THALAKKADATHUR	Thirur municipality	Setting up of STP at Market -45KLD Setting up of STP at Private Bus stand-50 KLD- Thirur municipality	Operational Under construction Civil work completed
				Kadalundi river - ALONG HAJIRAPPALLY/ HAJIYARPALLI	Malappuram municipality	Setting up of STP of 30KLD	Operational
			Palakkad	Bharathapuzha- ALONG PATAMBI	Pattambi Municipality	Primary Sewage Treatment Plant (oil and grease trap with grit chamber) and Septage Treatment plant - Pattambi Municipality	Proposal Submitted Before Governin g Council
			Thrissur	Kecheri- PULIYANNOR TO KECHERY	Wadakkanchery Municipality	Common STP of 500 MLD to cater the entire city– Wadakkanchery Municipality 2 common STPs are proposed, one at Athani market (350 KLD) and other at Ottupara market (500 KLD).	Identified land and soil test is ongoing DPR prepared and Submitted before KIIFB
				Karuvannur- ALONG KARUVANNUR	Irinjalakkuda Municipality	Construction of FSTP and STP-Irinjalakkuda Municipalityproposed	Process is ongoing for

								preparation of DPR. Tender done.
					Puzhakkal-OLARIKKARA TO PUZHACKAL	Thrissur Corporation	Sewage treatment plant of 100 KLD at Ramavarmapuram, Thrissur	Work tendered and selection memo issued, will apply for Integrated Consent to Establish (ICE) of State Board. As per agreement The work will be completed within 9 months after obtaining ICE.
							Sewage treatment plant of 360 KLD at General Hospital, Thrissur in Amrut Project-Thrissur Corporation	Work awarded but agreement not executed
							Constructing decentralised sewerage scheme atVanchikulam -2.5 MLD plant - Thrissur Corporation	To be retendered

			Ernakulam	Chithrapuzha-IRUMPANAM TO KARINGACHIRA	Thrippunithura Municipality	Additional STP requirement (if needed) (Thrikkakkara Municipality, ThripunithuraMunicipality)- Associated withCochin Corporation Brahmapuram plant	Requested Government for land
				Kadambrayar-MANCKAKADAVU TO BRAHMAPURAM	Thrikkakkara Municipality	Provide facility for the treatment of sewage, sullage and garbage generated- Thrikkakkara Municipality	Requested Government for land - Clarifications submitted to Urban Directorate by Municipality
				Periyar- ALWAYE-ELOOR TO KALAMASSERY	Aluva Municipality	Augmentation and Revamping of existing STP at near Adwaitha Ashramam - Aluva Municipality . Augmentation and	Aluva Municipality budgeted the amount in 2019-20 & 2020-21 plan project. Got technical approval from technical committee for DPR. Tendering process started. An amount of

							Revamping of existing STP at Aluva Market - Aluva Municipality	10 lakhs is included in the 2020-21 annual project. Fisheries department should handover the ETP to municipality so that Municipality can revamp and augment the ETP.
						Kalamassery Municipality	Installation of common STP of 10 KLD for Kalamassery Municipality and ETPat Municipal Market Kalamassery Municipality	Construction completed. Started operation.
				Kozhikode	Kallayi-THEKEPURAM TO ARAKKINAR	Kozhikode corporation	Setting up of common STP of(13 MLD) (i.e. at Kothi bridge- 6 MLD plant proposed and at Avikkal -7 MLD plant proposed) Establishment of Sewage treatment plant with septage treatment plant at Medicalcollege (3 MLD plant) 2MLD, 1 MLD plant	To be retendered Work started

			Pathanamthtitta	Pamba- MANNAR TO THAKAZHY	Mannar grama panchayath &Kadapragrama panchayath	STP is not required. Proposed installation of screening, septic tank &disinfection systems for storm water drains in Mannar&Parumala town	Action is being taken
			Alappuzha	Manimala- KALLOOPARA TO THONDRA	Chengannoor and Thiruvallamunicipality	Septage and sewage treatment plant for Chengannoor and Thiruvalla municipality proposed	Proposal for setting up an FSTPin Chengannur is initiated.
			Trivandrum	Karamana- MALEKKDU TO THIRUVALLAM	Trivandrum corporation	107 MLD common STP exists 10 KLD STP at Kumarichanda 5 MLD sewage treatment plant at Medical College-Kerala Water Authority proposed Additional STP requirement by Kerala Water Authority for 60 crores	Operational Operational Under construction-40% completed A detailed engineering report for engaging consultant prepared

AMRUT - SEPTAGE PLANTS

Category	Number of Plants	Cost (Rs. Cr.)	AMRUT City
Work started	1	4.50	Guruvayoor-1no.
Agreement executed but not started	1	3.42	Kannur-1no.
Awarded but Agreement not executed	2	6.91	Thrissur-1no., Palakkad-1no.
Tendered but not awarded	1	4.22	Kollam-1no.
TS not issued	2	0.80	Alappuzha-2nos.
To be cancelled	2	8.44	Kollam-1no.
Total	**9**	**28.29**	

AMRUT - SEWAGE PLANTS

Category	Number of Plants	Cost (Rs. Cr.)	AMRUT City
Work started	3	33.28	Kozhikkode-2 nos.& Thiruvananthapuram-1no.
Awarded but Agreement not executed	3	22.92	Thrissur-1no., Kochi-1 no.&Palakkad-1no.
Tendered but not awarded	7	152.82	Kochi- 3 nos., Palakkad-1no., Kollam- 1no., Kannur-1no.& Alappuzha-1 no.
To be retendered	3	169.90	Thrissur-1no.& Kozhikode – 2nos.

TS not issued	2	2.68	Alappuzha-2nos.
Total	**18**	**381.60**	

AMRUT - SEPTAGE & SEWAGE PLANTS

Category	Number of Plants
Total septage treatment plants	9
Total sewage treatment plants	18
Grand Total ofplants	27
Plants being implemented by ULB (no.)	24
Plants being implemented by KWA(no.)	3
Consultants employed for DPR(no.)	1(21plants/27 plants)
Work awarded- implemented by ULB	8(septage-4 & sewage-4)
Work awarded- implemented by KWA	2(sewage-2)

Commencement of setting up of STPs and connecting all the drains and other sources of generation of sewage to the STP s must	Progressing	Progressing

	be ensured		
2.	Timeline for completing all steps of action plans including completion of setting up STPs and their commissioning	31.03.2021	Progressing
5.	Chief Secretaries may set up appropriate monitoring mechanism at State level Specifying accountability of nodal authorities not below the Secretary level Chief Secretaries may have an accountable person attached in their office for this purpose	Completed	*VideG.O.(Rt)No.93/2020/WRD dated 28.01.2020 Government of Kerala nominated Deputy Secretary (Projects),Water Resource Department as the nodal authority, Government of Kerala for monitoring the compliance of the directions in the order on fortnightly basis and to maintain record of progress and to act as an accountable person to the Chief Secretary for thepurpose. *Vide G.O.(Rt)No.223/2020/WRD dated 12.03.2020 Government of Kerala appointed a monitoring committee comprising of Additional Chief Secretary, Water Resources Department as Chairperson and Principal Secretary, LSGD, Principal Secretary, Environment, Secretary, Water Resources Department and Staff officer to Chief Secretary as nodal officers & members.

	Monitoring at State level must takeplace	Fortnightly	Review on progress of action plans is being done at district and state level

National Mission for Clean Ganga

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(Hon'ble NGT in the matter of OA No.673/2018 dated 06.12.2019)

RIVER KARAMANA, THIRUVANANTHAPURAM

S. No.	Activity to be monitored	Timeline	Submission of progress by state/UT-Compliance status
1	Ensure 100% treatment of sewage at least in-situ remediation	31/03/2020	Sewage Generation -128 MLD Sewage Treated - 80 MLD Existing CSTP Capacity-107MLD Other Individual STP-3.57 MLD Progress on Expanding the sewage networks submitted by KWA attached
	Commencement of setting up of STPs and connecting all the drains and other sources of generation of sewage to the STPs must be ensured	31/03/2020	Progress report on setting up STPs connecting Drains are not submitted
2	Timeline for completing all steps of action plans including completion of setting up STPs and their Commissioning	31/03/2020	
5	Chief Secretaries may set up appropriate monitoring mechanism at state level • Specifying accountability of nodal authorities not below the Secretary level • Chief Secretaries may have an accountable person attached in their office for this purpose.		
	• Monitoring at State level must take place	Fortnightly Commencing 21.12.20	

		19	
6	Progress report may be furnished by the State/UTs to • Secretary,Ministry of Jal Shakti • Member Secretary,CPCB		

6.1	Progress Report may be comprised of details along with completion timelines on: (I) Identification of polluting sources including drains contributing to river pollution and action as per NGT order on in-situ treatment.	Completed	11 Polluting Drains were identified
	(II) <u>Status of STPs, I&D and sewerage networks</u> Details of Existing Infrastructure,Gap Analysis, Proposed along with completion timeline		Sewage Generation -128 MLD Sewage Treated - 80 MLD in 107 MLD CSTP Other Individual STPs-3.57 MLD Proposed expansion of sewer network , additional STP as mentioned in action plan submitted by KWA
	(III) <u>Status of CETPs</u> Details of Existing CETP and ETP Infrastructure,Gap Analysis, Proposed along with completion timeline, No. of industries and complying status		There is no existing CETP in polluted stretch. No CETP proposed as there are no industries identified in polluted stretch.
	(iv) <u>Status of Solid Waste Management & Details of Processing Facilities</u> Details of Existing Infrastructure,Gap Analysis, Proposed along with completion timeline		Solid waste generated-353.51 TPD Solid waste treated -349 TPD Gap- 4.51 TPD
	(v)Latest water quality ofpolluted river, its tributaries, drains with flow details and ground water quality in the catchment of polluted river;		Water quality submitted as Annexures
	(vi)Preventing dumping of waste and scientific waste management including bio-medical		• The Two Bridges in the polluted

	waste, plastic waste and decentralizing waste processing, including waste generated from hotels, Ashrams, etc.		Stretch(maruthoorkadav and thiruvallom) which were susceptible to waste dumping into the river was provided with fencing of adequate height.
	(vii)Ground water regulation		NIL
	(viii) Adopting good irrigation practices,		Mentioned in status report submitted by Irrigation dept
	(ix) Protection and management of food plain Zones (FPZ),		Mentioned in status report submitted by Irrigation dept
	(x) Rain water harvesting,		NIL
	(xi)Maintaining minimum Environmental flow of river		Mentioned in status report submitted by Irrigation dept
	(xii) Plantation on both sides of the river		Mentioned in status report submitted by Irrigation dept
	(xiii) Setting up biodiversity parks on flood plains by removing encroachment		Bio- diversity park at Karamana II phase - walkway ,gate, fencing, lightening etc-96% completed-Work in Progress.- Implemented by irrigation dept

ACTION PLAN FOR RIVER KARAMANA, KERALA

1. Short termplan

Maintenance and de-bottlenecking of existing seweragenetwork

No.	Activity	Implementing agency	Time line	Progress in the month of July	Progress in the month of August	% works comple ted	Details of works remaining
2.1.1	Pumping lines from the terminal pumping stations namely Kuriyathi, Pattoor, Kannammoola and Enchakkal pumping stations are to be connected directly to STP at Muttathara	Kerala Water Authority	May 2019			100%	When 50 % of sewage (35 MLD) was diverted directly to the STP on completion of laying of pumping line from Kuriyathy to STP, overflow to TS Canal has completely stopped. DER for replacing old pumping main from Pattoor and Kannanmoola has been prepared.FromEnchakkal only 5 MLD of sewage is being pumped to stilling chamber and hence not needed to replace the line urgently.
	Kuriyathi pumping line						
2.1.2	Rehabilitation/upgradation of Thaliyal and Aranoor Sewerage Pump house by rehabilitation of existing well, construction of new well and grit chamber, installation of new pump sets	Kerala Water Authority	May 2020	10% 5%	5% 0%	Thaliyal- 60% Arannoor- 25%	a) 7 m dia 9 m deep RCC well - Completed b)Grit chamber - completed c)Interconnection works between existing and newly constructed well and grit chamber- restarted after heavy rain and Covid restrictions . d) Erection of pumpsets and diesel generator - orders placed by contactor. a) Providing RCC lining for the existing two wells Second well can be commenced only after

							erecting new pumpsets in the conpleted well. b) Erection of pumpsets and diesel generator - orders placed by contactor. The work restarted after COVID 19 restrictions and monsoon.
2.1.3	5 MLD sewage treatment plant at Medical College	Kerala Water Authority	May 2020	5%	5%	40%	Progress of the work slowed down due to pending payment of 3.5 Cr from AMRUT and Covid lock down.
2.1.4	Installation of adequate pumps in Mudavanmughal and Enchakkal pumping stations	Kerala Water Authority	March 2020	0%	0%	Work order issued	Can be completed by December 2020
2.1.5	DG sets in all lift and pumping stations – Mudavanmughal, Aranoor, Thaliyal, Kuriyathi, Pattoor, Kannammola,Pattom,Murinjapalam and Enchakkal	Kerala Water Authority	May 2020	0%	0%	Work order issued for Mudavanmughal, Kuriyathi, Pattoor, Kannammola, Pattom, Murinjapalam	For Arannoor and Thaliyal -Erection of diesel generator is already included in the item mentioned 2.1.2 Above For Enchakkal DG sets already exists
2.1.6	Reconnect sewer at Rajaji Nagar, stop outflow of sewage into Amayizhanchanthodu, control stormwater entry into sewer to avoid overflow in Thampanoor area Sewage generated in Rajaji Nagar shallbe diverted to main sewerline	Kerala Water Authority	Dec 2020	0%	0%	Work awarded. Work revised by rerouting the pipeline through main road in front of KSRTC terminal at Thampanoor	Foot path cutting requested from M/s KRFB. Estimate received. Road restoration charges to be remitted.Can be started after the monsoon as Thampanoor is a water logged area. Only one month is required for completion of work

	Sewage generated in Thoppil area shallbe diverted main sewerline						
2.1.7	Discharge of sewage in Parayilkadavu shall be stopped as there is overflow of sewage reaches in houses having sewerage connection and this may leadtodischargeofsewageintoRiver Karamana	Kerala Water Authority	Completed	20%	20%	90%	Rehabilitation work of existing pipe line is included in the work State Plan -2019-20- Rehabilitation of sewer line from Sathya Nagar to Karamana BHS and allied works. Out of 450m pipe laying, only 15m pipe laying work is to be completed. Request for road cutting sanction for this 15m is submitted to PWD.Joint inspection conducted on 18.08.2020.
2.1.8	Divert the sewer line from the School compound of Government Karamana High School	Kerala Water Authority	Awarded	20%	20%	90%	Out of 450m pipelaying, only 15m pipe laying work is to be completed. Request for road cutting sanction for this 15m is submitted to PWD.Joint inspection conducted on 18.08.2020.
2.1.9	**Rehabilitation by laying new lines increasing size of undersized main and reconstruction by dilapidated manholes for the last 3 years**	Kerala Water Authority	May 2020			Works completed – 49 No. (Rs. 10.09 cr.) AMRUT-33, State plan-14 MLA ADF/SDF-2 In progress – 18 No. (Rs.6.62 cr.) AMRUT-9, State plan-9 MLA ADF/SDF-0 To be arranged – 12 No. (Rs. 3.43 cr.) AMRUT-3, State plan-8 MLA ADF/SDF-1	Out of 12 works to be arranged a)4 works approved by KWA Board and awaiting sanction from AMRUT SHPSC. b) For 4 works single offers received. c)Two works estimate recasted and tendered. d)works- estimate to berecasted.

	Total works in progress (45No.) Works in tendering (33No.)						
2.1.10	Extension of sewer network wherever technically feasible in new areas of existing blocks In progress(17No.) Tendering(12No.)	Kerala Water Authority	May 2020			Works completed - 16 No. (Rs. 2.82 cr.) AMRUT-7, State plan-8 MLA ADF/SDF-1	
						In progress – 5 No. (Rs. 13.01 cr.) AMRUT-2, State plan-3 MLA ADF/SDF-0	
						To be arranged– 8 Nos. (Rs. 9.26 cr.) AMRUT-3 State plan-5	Out of 8 works to be arranged, a) 3 works approved by KWA Board and awaiting sanction from AMRUT b) 4 works need Land acquisition. Land acquisition process completed for one work and District Collector has requested to remit 2.3 Cr urgently. c) For one work single offer received at 27% above estimate.
2.1.11	Procurement of sewercleaning machines and equipment maintenance	Kerala Water Authority	Mar2020			No response to repeated tender.	Estimate re-casted and under process.

Solid Waste Management Action Plan

Sl.No	**Activity**	**Implementing Agency**	**Unit**	**Time for completion**	Progress in the month of July	Progress in the month of August	% works completed	Details of works remaining
2.2.1	Slaughter ho use and poultry waste	Thiruvananthapuram Corporation	Rendering plant	March 2021	**Slaughter House**- Work awarded to KEL Agreement executed duration-1 year	**Slaughter House**- Work awarded to KEL Agreement executed duration-1 year. Work will commence soon.		

2.2.2	Sanitation facility and treat of waste water in the markets of Pangode, Kumarichanda		Treatment plant Portable aerobic bins	Mar 2021	**Kumarichanda**: STP Plant (Bio membrane bioreactor Technology-10KLD) conducted trail run to check whether the effluent is within permissible limit as per KSPCB. **Pangode**: Steps were taken to clean existing septic tank and an estimate amount of 28 lakhs prepared for establishing modern ETP. Project approved by DPC –Rennovation of pangode fish market ETP-25KLD.	**Kumarichanda**: STP Plant (Bio membrane bioreactor Technology-10KLD) conducted trail run to check whether the effluent is within permissible limit as per KSPCB. **Pangode**: Steps were taken to clean existing septic tank and an estimate amount of 28 lakhs prepared for establishing modern ETP. Project approved by DPC – Rennovation of pangode fish market ETP-25KLD.		
2.2.3	Provide facility for the treatment of sewage, sullage and garbage generated in the Poonthura slum area	Thiruvananthapuram Corporation	Aero bins at various places(28) **Proposed sites** 1. Moonnathumukku – Purampoku 2. Poonthura – HI Office 3. Cheriyanmuttam– Poonthura 4. Beemapally Compound 5. TsunamiColony 6. Mother Theresa Colony		Garbage: Regarding Solid Waste Management in Poonthura Colony door to door collection started and wet waste is treated in Aerobic bin and dry waste to RRC. Regarding treatment of sullage, land availability is aproblem to establish a common treatment facility.So	Garbage: Regarding Solid Waste Management in Poonthura Colony door to door collection started and wet waste is treated in Aerobic bin and dry waste to RRC. Regarding treatment of sullage, land		

	between Karamana river and sea		7. KumariChantha 8. PoonthuraMarket 9. Moonnattumukku bridge 10. Ambalathara–Nilama 11. Fishermen Flat–Muttathara 12. PerunalliMarket road 13. Poundkadavuold market 14. Market behind Attipra zonaloffice 15. Tsunami Colony near 110KV tower (Poundkadavu) 16. Near ValiyavilaVeli St. Thomas Church (Poundkadavu) 17. Near Kamalesshwaram HSS 18. Valiyaveetil Residence association 19. NearArannoorGovt Quarters 20. Kunjalumoodu Junction 21. KumarapuramThamarabhagam(near comfortstation) 22. NaerKannammoola Bridge 23. Mannanthala Market 24. SanthiNagar Residents association 25. AlantharaKattayil 26. UlloorMarket 27. Museum RKVRoad 28. New Nalantha Road	March 2020	sucking tanker will be provided free of cost and will be carried to STP plant at Muttathara for safe disposal.	availability is a problem to establish a common treatment facility. So sucking tanker will be provided free of cost and will be carried to STP plant at Muttathara for safedisposal.		

2.2.4	The discharge of waste water from the surrounding houses to the pond at Jagathy is to be stopped	Thiruvananthapuram Corporation	Pondde-silting Issued notices to thehousehold Project is prepared for de-silting the pond	March 20	Notice issued to households is to stop discharge of waste water to pond.	Joint inspection was conducted by Thiruvananthapuram Corporation and KWA to identify the site for the installation of STP and affected area is identified.		
2.2.5	Around 155 Houses in Kurukuvilakom, Kannettumukku shall be provided with septic and treatment system	Thiruvananthapuram Corporation			Door to door collection facility is provided. Health Supervisor and Jagathi circle Health Inspector is authorised to issue notice on the basis of site inspection. Notice was issued to households to provide septic tank.	Proposal for septic tank and treatment system for 155 houses in kurukuvilakom, Kannettumukku is submitted by KWA. Conducted a joint inspection by Tvmp Corporation and KWA.		
2.2.5	Identification of illegal outlets into storm water drains and fine shall be imposed on such units	Thiruvananthapuram Corporation	Fine imposed and prosecution initiated		15.34 lakhs fine collected	15.34 lakhs fine collected		
2.2.6		Thiruvananthapuram Corporation	Bio-Composter		Tender proceedings are initiated. Regarding Three layers Bio-composter Bin (for wet	Regarding Three layersBio-composter Bin (for wetwaste		

	Biodegradable waste			May 2020	waste management in houses) supply order issued and installation of fifty Thousand kitchen bin units is ongoing. DPR Sanctioned amount of State and Central share had released rupees 13,45,43,500 (partial).	management in houses) supply order issued and installation of fifty Thousand kitchen bin units is ongoing. DPR Sanctioned amount of State and Central share had released rupees 13,45,43,500 (partial). Work awarded. 12000 units installed.		
2.2.7			Thumboormuzhi aerobic bins		Agreement Executed.	Agreement Executed. Work will commence soon.		
2.2.8			Community biogas		Awaiting TS from Suchithwa Mission	Awaiting TS from Suchithwa Mission		
2.2.9			Organic Waste Converter		Agenda sent to HSC for demarcating site for installation.	Site identified. Project detailing stage.		

2.2.10		Thiruvananthapuram Corporation	Portable biogas		Dropped	Dropped		
2.2.11			Portable aero bins		Issued supply order.			
2.2.12			Ring compost		Work Awarded.	Placed before council for review.		
2.2.13			Segregation bins		Tendered and placed before Purchase Committee.	Agreement Executed.		
2.2.14	Biodegradable waste	Thiruvananthapuram Corporation	RRC		Agreement Executed	Work will commence soon		
2.2.15			Plastic Recycling unit		Decided to expand to RRC for plastic pre processing	Project detailing stage.		
2.2.16			Mobile MRF		Design finalised and Tender process going on.	Tendering stage.		
2.2.17			Electronic Weigh bridge		For EOI verified by PWD mechanical division. Agenda send to HSC for demarcating the land for installation.	Agenda send to HSC for demarcating the land for installation.		
2.2.18			Solar electrical cart		Specification is finalised, Tender process going on.	Tender through GEM		
2.2.19			Swaps shops		Quotation	Agreement not Executed		
2.2.20			PET bottle crushing		May be dropped. Agenda sent to HSC for review.	Agenda sent to HSC for review.		

2.2.21			Community level unit Napkin destroyer		Word Awarded	Word Awarded		
2.2.22		Thiruvananthapuram Corporation	Animal Crematorium at Kattela	May 2020	TS Awaiting	TS Awaiting		
2.2.23		Thiruvananthapuram Corporation	Urban Gardening		Cancelled	Cancelled		
2.2.24		Thiruvananthapuram Corporation	Upgradation of present facilities		Agreement Executed	Agreement Executed. Work is in progress.		
2.2.25		Thiruvananthapuram Corporation	Capacity Building & IEC		Process on going	Process on going		
2.2.26		Thiruvananthapuram Corporation	Viability gap Fund		VGF 1st phase issued to Harithakarmasena	VGF 1st phase issued to Harithakarmasena		
2.2.27	Prevent entry of storm water into sewer line along with KWA	Thiruvananthapuram Corporation	KWA is authorized to prepare and implement proper sewerage lines under Amrut scheme	May 2020	Close monitoring is done by health Squad and all Health Inspectors are directed to issue notice and prosecution.	Close monitoring is done by health Squad and all Health Inspectors are directed to issue notice and prosecution.		

2.2.28	Take steps to prevent the solid wastes in sewer line as reported by KWA	Thiruvananthapuram Corporation	Squad andFines Special squad is formed at Corporation level. Health Inspectors are authorized for regularly monitoring and preventing the wastedischarge	May 2020	Employees were placed at various spots during night to prevent dumping of Solid Waste in drains. And fines are being charged. Regarding to waste throwing to public place Corporation collected an amount of Rs413736/- as fine from 01.01.2020.	Employees were placed at various spots during night to prevent dumping of Solid Waste in drains. And fines are being charged. Regarding to waste throwing to public place Corporation collected an amount of Rs437022/- as fine from 01.01.2020.		

Monitoring

	Activity	**Implementing agency**	**Time line**	**Water quality in July/** pre-monsoon	**Water quality in August/** monsoon	**Water quality in** post- monsoon
2.3.1	River water quality monitoring - Killiyar, Karamana, Parvathiputhanar, Akkulam-Veli lake	Kerala State Pollution ControlBoard	Ongoing; monthly	Annex 1a, 1b, 1c, 1d		

2.3.2	Storm drains monitoring - Amayizhanchanthodu, Ulloorthodu, Pattomthodu, Kannamoolathodu, Thekkanakkara canal	Kerala State Pollution ControlBoard	Ongoing Seasonal monitoring – pre-monsoon, monsoon, post-monsoon	Annex 2		
2.3.3	Inspection and effluent quality monitoring of the flats, industrial units, service stations, hospitals, hotels etc in Thiruvananthapuram Corporation area	Kerala State Pollution Control Board	Ongoing Interval: Red – 1 month. Orange – 3 m. Green – 6 m.	NIL	NIL	

2. Long termPlan

Seweragenetwork

	Long term measures proposed	Implementing agency	Amount Required (Rs.in Crore)	Time line	Progress in the month of July	Progress in the month of August	% works completed	Details of works remaining
3.1.1	Extension of sewerage system to Block F to G coastal belt	Kerala Water Authority	200	Three years			Block F2-Zone II -76%	Balance works (Block F1 & Block F2- Zone I, Blocks G1 & G2) pending since land for lifting stations has not been transferred from TVM

								Corporation
3.1.2	Extension of sewerage system to Block H to R	Kerala Water Authority	700					Works of conveyance mains and Collection well & pumping stations are being done under AMRUT project for the blocks H to N. PER for the sewer net work in these blocks and the PER for the sewerage system for the remaining blocks are being prepared. Land for lifting stations are to be made available by the Corporation Authority.
3.1.3	Extension of sewerage system to Newly added	Kerala Water Authority	300					Investigation, design, preparationof DER and tendering are to be done prior to execution. With the limited staff strength available, it will be time consuming if KWA is directly taking up these preexecutionprocesses. Hence inorder to speed up the process, it was decided to call for EOI for engaging consultants forinvestigation, design and DER preparation. Accordingly sanction was sought from GoK for including the work under RKI and vide order No. GO (Rt) No. 28/2019/P&EA dated 15/11/2019 sanction was accorded in principle for the same. The Preliminary Engineering Report for according Administrative
3.1.4	Providing sewerage system in Block A to E	Kerala Water Authority	100					
3.1.5	Rehabilitation of existing Network and pump house in block A toE	Kerala Water Authority	100					
3.1.6	Procurements of equipments for maintenance seweragesystem	Kerala Water Authority	10					
3.1.7	Additional STP requirement	Kerala Water Authority	60					

								Sanction has been submitted to Government on 16/06/2020 but the same has not been obtained till now. Only on receipt of Administrative Sanction, the work can be taken up and the tendering of the long term measures proposed can be done only after preparing the DER and on availability of sufficient funds.
3.1.8	Total Amount required	Kerala Water Authority	1470 Crores					

Solid wastemanagement

	Long term measures proposedbyThiruvananthapuram	Implementing agency	Time line	Progress in the month of July	Progress in the month of August	% works completed	Details of works remaining
3.2.1	Acquire 58 acres of land and rehabilitate 8150 families from the banks ofRiver	Thiruvananthapuram Corporation	5 years	nil	nil	nil	nil

De-silting anddevelopment

No.	Activity	Implementing agency	Timeline	Progress in the month of July	Progress in the month of August	% works completed	Details of works remaining

3.3.1	Development package for ParvathyPuthanar	Irrigation department Included in KIFB by KWIL includes cleaning of canal	3 years		Kerala water ways & Infrastructure Ltd,		
3.3.2	De-silting and development of AmayizhanchanThodu	Irrigation Department	1.5 years		Tendered with opening date 21.7.2020.NO RESPONSE and RETENDERED with opening date 24.9.2020		
3.3.3	Improvements to Thekkenekara canal and de-silting-	Irrigation Department	1 year		Estimate submitted for sanction		
3.3.4	Karimadam tank improvements, de-silting sheet piling/under preparation and providing fencing	Irrigation Department	1.5 years		Estimate Amounting to Rs. 114 lakhs submitted for sanction (Price ID 2020/4430/IA)		
3.3.5	Development of Karamana basin	Irrigation Department	1.5 years		4 nos of works amounting to Rs. 200 lakhs submitted to ThiruvanathapuramCorpn. And 3 nos of works amounting to Rs. 477 lakhs the submitted to CE I&A TVPM,List is attached		

	A) 4 nos of works amounting to Rs. 200 lakhs submitted to ThiruvanathapuramCorpn i) NGT-Karamana River basin-Construction of protection wall on the breached portion of left bank of Karamana river near KaimanamMaha Vishnu Temple downstream of Pappanamcode iron bridge in Thiruvananthapuram corporation ii) NGT-Karamana River basin- Fencing and silt removal for pollution abatement initiatives for Killi river in Thiruvananthapuram corporation. iii) NGT-Karamana River basin-Protection wall on the left side of Karamana river downstream Karamana bridge near Kaladi check dam opposite to Thaliyal Temple Kadavu in Thiruvananthapuram corporation iv) NGT-Karamana River basin-Protection wall on the breached portion of right bank of Karamana river upstream of				herewith Submitted to TVPM Corpn for sanction (estimate-50 Lakhs) Submitted to TVPM Corpn for sanction (Amount-50 Lakhs) Submitted to TVPM Corpn for sanction (Amount -50 Lakhs) Submitted to TVPM Corpn for sanction (Amount -50 Lakhs)		

	Kaimanam bridge near Sasthri Nagar in Thiruvananthapuram corporation. **3 nos of works amounting to Rs. 477 lakhs the submitted to CE I&A TVPM** i) NGT-Karamana River basin-Protection wall at RB of karamana River from AttuppuramPallathukadavu in Kaladi ward in Thiruvananthapuram corporation. ii) NGT-Karamana River basin- Protection wall at RB of karamana River near Cocunut Valley in Kulasekharam in Thiruvananthapuram corporation iii) NGT-Karamana River basin-Construction of shutters at various portions in Karamana River and KilliRiver in Thiruvananthapuram corporation.				Submitted to CE I& A TVPM for sanction (Amount -320 Lakhs) Submitted to CE I& A TVPM for sanction (Amount -45 Lakhs) Submitted to CE I& A TVPM for sanction (Amount -112 Lakhs)		

STATE WATER MONITORING PROGRAMME (SWMP) 20						
Analysis Report for the month of JULY-2020						
Name of River		KARAMANA				
Date and Time of Sample collection		2/7/2020				
Method of analysis						
Sl no.	Parameters	SAMPLE ID				
		Peppara	Aruvikkara	Mangatukadavu	Pallathukadavu	
1	Temperature,degree celsiu	26	27	26	27	
2	pH	6.8	6.8	6.7	6.6	
3	Turbidity,NTU	3.9	6.1	6.4	7.3	
4	Electrical Conductivity,	52	56	69	125	
5	DO,mg/l	6.5	7.2	4.9	2.9	
6	BOD,mg/l	0.9	1.7	2.5	4.8	
7	NH3N,mg/l	BDL	BDL	BDL	BDL	
8	Nitrate,mg/l	BDL	BDL	BDL	BDL	
9	Chloride,mg/l	6	8	11	14	
10	Phosphate,mg/l	BDL	BDL	BDL	BDL	
11	Total Alkalinity,mg/l	16	14	15	38	
12	Total Hardness,mg/l	16	16	26	45	
13	Calcium,mg/l	12	12	18	35	
14	Magnesium,mg/l	4	4	8	10	
15	Sodium,mg/l	3.9	4.3	5.8	7.4	
16	Potassium,mg/l	1.4	1.2	1	2.5	
17	Boron,mg/l	0	0	0	0	
18	SAR	0.248767	0.274282	0.285674	0.283658	
19	TC,cfu/100ml	300	400	1200	1500	
20	FC,cfu/100ml	100	100	600	500	
21	Faecal Streptococci	ND	ND	ND	ND	

STATE WATER MONITORING PROGRAMME (SWMP) 20						
Analysis Report for the month of AUGUST-2020						
Name of River		KARAMANA				
Date and Time of Sample collection		17/8/2020				
Method of analysis						
Sl no.	Parameters	SAMPLE ID				
		Peppara	Aruvikkara	Mangatukadavu	Pallathukadavu	
1	Temperature,degree celsiu	27	26	27	26	
2	pH	6.5	6.7	6.6	6.4	
3	Turbidity,NTU	4.1	4.8	5.2	5.6	
4	Electrical Conductivity,	51	56	72	122	
5	DO,mg/l	6.6	6.8	4.7	3.8	
6	BOD,mg/l	1	1.3	2.4	4.2	
7	NH3N,mg/l	BDL	BDL	BDL	BDL	
8	Nitrate,mg/l	BDL	BDL	BDL	BDL	

9	Chloride,mg/l	6	7	11	13
10	Phosphate,mg/l	BDL	BDL	BDL	BDL
11	Total Alkalinity,mg/l	15	16	16	39
12	Total Hardness,mg/l	18	19	25	46
13	Calcium,mg/l	13	14	20	38
14	Magnesium,mg/l	5	5	5	8
15	Sodium,mg/l	3.2	4	5.8	6.8
16	Potassium,mg/l	1.3	1.4	1.2	2.2
17	Boron,mg/l	0	0	0	0
18	SAR	0.190973	0.233286	0.300173	0.261402
19	TC,cfu/100ml	200	300	1100	1400
20	FC,cfu/100ml	100	100	500	400
21	Faecal Streptococci	ND	ND	ND	ND

)20

Thiruvallom	Moonnattumukku
27	27
6.8	6.8
10.1	7.4
286	322
2.8	0.6
6.6	9
BDL	BDL
BDL	1.3
35	43
BDL	BDL
89	84
94	91
61	60
33	31
18.2	27
7.2	7.2
0	0
0.466036	0.704609
4100	14000
800	5100
ND	ND

Stations in Polluted stretch

)20

Thiruvallom	Moonnattumukku
27	26
6.7	6.4
8.2	8.1
282	327
3.1	0.8
6	8.4
BDL	BDL
BDL	1.4

36	43
BDL	BDL
84	87
91	102
63	73
28	29
19	24
6.1	6.5
0	0
0.500221	0.600612
4200	16000
900	5300
ND	ND

STATE WATER MONITORING PROGRAMME (SWMP) 2020

Analysis Report for the month of JULY 2020

Name of River **Killi**

Date and Time of Sample

Method of analysis

Sl no.	Parameters	SAMPLE ID				
		Karipoor	Vazhayila	Maruthankuzhi	Jagathy	Killipalam
1	Temperature,degree ce	27	26	27	26	26
2	pH	6.8	6.7	6.4	7.3	7.5
3	Turbidity,NTU	4.2	4.8	5	6.1	6.5
4	Electrical Conductivity,	67	100	126	138	140
5	DO,mg/l	6.4	6.6	5.2	3.1	1.9
6	BOD,mg/l	1.5	1.8	2.5	6.8	7.1
7	NH3N,mg/l	BDL	BDL	BDL	BDL	BDL
8	Nitrate,mg/l	BDL	BDL	BDL	BDL	BDL
9	Chloride,mg/l	7	8	17	20	30
10	Phosphate,mg/l	BDL	BDL	BDL	BDL	BDL
11	Total Alkalinity,mg/l	26	30	32	34	37
12	Total Hardness,mg/l	31	35	46	51	54
13	Calcium,mg/l	28	30	38	40	42
14	Magnesium,mg/l	3	5	8	11	12
15	Sodium,mg/l	3.7	4.4	9.8	10.7	16.8
16	Potassium,mg/l	1.3	1.8	2.7	3.1	3.4
17	Boron,mg/l	0	0	0	0	0
18	SAR	0.1772	0.195682	0.376726	0.385986	0.587871
19	TC,cfu/100ml	400	500	800	1200	1500
20	FC,cfu/100ml	100	100	400	400	600

ASSISTANT SCIENTIST

Analysis Report for the month of AUGUST 2020

Name of River **Killi**

Date and Time of Sample

Method of analysis

Sl no.	Parameters	SAMPLE ID				
		Karipoor	Vazhayila	Maruthankuzhi	Jagathy	Killipalam
1	Temperature,degree ce	27	27	26	27	27
2	pH	6.5	6.4	6.5	7.1	7.4
3	Turbidity,NTU	3.8	5.1	5.6	5.9	6.8
4	Electrical Conductivity,	70	84	126	136	170
5	DO,mg/l	6.2	6.4	5.4	3.2	2.2
6	BOD,mg/l	1.8	2.1	2.4	6	6.6
7	NH3N,mg/l	BDL	BDL	BDL	BDL	BDL
8	Nitrate,mg/l	BDL	BDL	BDL	BDL	BDL

9	Chloride,mg/l	6	8	16	18	28
10	Phosphate,mg/l	BDL	BDL	BDL	BDL	BDL
11	Total Alkalinity,mg/l	23	27	36	37	38
12	Total Hardness,mg/l	29	33	43	47	51
13	Calcium,mg/l	25	28	35	38	41
14	Magnesium,mg/l	4	5	8	9	10
15	Sodium,mg/l	3.5	4.3	8.5	9.8	14.6
16	Potassium,mg/l	1.2	1.6	1.8	2	2.8
17	Boron,mg/l	0	0	0	0	0
18	SAR	0.171251	0.196442	0.336774	0.370809	0.529625
19	TC,cfu/100ml	600	600	700	1000	1300
20	FC,cfu/100ml	200	200	300	400	700

☎0471-2303844

e.mail: kspcbdotvpm@gmail.com

KERALASTATE POLLUTION CONTROLBOARD

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DISTRICT OFFICE, THIRUVANANTHAPURAM

P n Ã m H m ^ o k v , X n c p h \ '] p c w
T. C. 12/96 (4,5), PLAMOODU JN., PATTOM P.O,THIRUVANANTHAPURAM – 695 004

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Analysis Report of Drains (Pre Monsoon)On 2020

Sl.No	STATIONS	Sample Collection Date	pH	BOD
1	Pippinmoodu	16/04/2020	6.2	75
2	Mudavanmugal,Arattukadavu	16/04/2020	5.8	90
3	JagathyPalam	16/04/2020	5.6	84
4	Kannettumukku	16/04/2020	6.2	66
5	Chadiyara	16/04/2020	6.4	87
6	Thamalam	16/04/2020	6.1	45
7	Mangottukadavu	16/04/2020	6.6	27
8	Thaliyal, Iyiranimuttom	16/04/2020	5.6	99
9	Killippalam(Thoppilkadavu)	16/04/2020	5.8	96
10	Kuriathy	16/04/2020	6.1	81
11	Moonnattumukku	16/04/2020	5.7	102

Analysis Report of Drains (Monsoon)On 2020

Sl.No	STATIONS	Sample Collection Date	pH	BOD
1	Pippinmoodu	17/09/2020	7.2	21.6
2	Mudavanmugal,Arattukadavu	17/09/2020	7.3	5.4
3	JagathyPalam	17/09/2020	7.6	6
4	Kannettumukku	17/09/2020	**Containment zone Sample not taken**	
5	Chadiyara	17/09/2020	7.8	11.4
6	Thamalam	17/09/2020	7.4	16.2
7	Mangottukadavu	17/09/2020	7.2	16.8
8	Thaliyal, Iyiranimuttom	17/09/2020	7.2	18.6
9	Killippalam(Thoppilkadavu)	17/09/2020	7.3	4.8
10	Kuriathy	17/09/2020	7.1	16.8
11	Moonnattumukku	17/09/2020	7.2	12.6

ASSISTANT SCIENTIST

MONTH OF JULY 2020

Parameter	VELI (boat club)	ParvathiPuthanar (Poonthura)
PH	7.1	7.6
Temperature	27	26
Conductivity	90	94
Suspended Solids	122	173
BOD (3 ds @ 27ºC)	24	28.8
DO	1.3	1.1
Total Hardness as CaCO3	196	301
Calcium Hardness as CaCO3	172	279
Magnesium Hardness as CaCO3	24	22
Total Coliform	14900	15400
Fecal Coliform	3000	3400
Chlorides	198	215
Total Alkanility as CaCO3	149	174

MONTH OF AUGUST 2020

Parameter	VELI at boat club	ParvathiPuthanar (Poonthura)
PH	7.2	7.8
Temperature	26	27
Conductivity	93	96
Suspended Solids	128	176
BOD (3 ds @ 27ºC)	27	29.4
DO	1.1	0.8
Total Hardness as CaCO3	200	295
Calcium Hardness as CaCO3	174	270
Magnesium Hardness as CaCO3	26	25
Total Coliform	14700	15100
Fecal Coliform	2800	3000
Chlorides	195	210
Total Alkanility as CaCO3	146	171

Telephone: 0471-2303844
e.mail: kspcbdotvm@yahoo.com

KERALA STATE POLLUTION CONTROL BOARD

t l c f k w Ø m \ a e n \ o l c W \ n b { ' W t m À U v
DISTRICT OFFICE, THIRUVANANTHAPURAM
P n Ã m H m ^ o k v , X n c p h \ '] p c w
T. C. 12/96 (4,5), PLAMOODU JN., PATTOM P.O, THIRUVANANTHAPURAM – 695 004
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ANALYSIS REPORT OF THODU (Pre Monsoon 2020)

Sl.No	Stations	PH	BOD (Mg/l)
1	Pattom Thodu	6.5	75
2	Thekkummoodu, Marappalam(After)	6.8	84
3	Thekkummoodu, Marappalam(Before)	6.4	63
4	Ulloor Bridge	6.1	69
5	Cosmo (Before)	6.9	84
6	Cosmo (After)	6.4	57
7	Kannammoola	6.8	75
8	Kannammoola,Swathy Nagar	6.6	84
9	Pattoor,Bhagavathy Temple	6.2	96
10	Pattoor,Bhagavathy Temple (After)	6.6	108
11	PoonthyRaad, Kumarapuram	5.6	75
12	Kims (Before)	6.2	84
13	Akkulam Boat Club	7.3	114
14	Amayizhanjan Thodu (End)	5.3	129

Checked By:

Compared By: ASSISTANT SCIENTIST

ANALYSIS REPORT OF THODU (Monsoon 2020)

Sl.No	Stations	PH	BOD (Mg/l)
1	Pattom Thodu	6.2	21
2	Thekkummoodu, Marappalam(After)	6.5	19.2
3	Thekkummoodu, Marappalam(Before)	6.3	25.2
4	Ulloor Bridge	6.4	18
5	Cosmo (Before)	6.6	16.8
6	Cosmo (After)	6.2	19.2
7	Kannammoola	6.5	25.2
8	Kannammoola,Swathy Nagar	6.4	26.4
9	Pattoor,Bhagavathy Temple	6.1	27
10	Pattoor,Bhagavathy Temple (After)	6.3	28.8
11	PoonthyRaad, Kumarapuram	5.9	27.6
12	Kims (Before)	6.1	28.8
13	Akkulam Boat Club	7.1	75
14	Amayizhanjan Thodu (End)	5.9	84

Checked By:

Compared By: ASSISTANT SCIENTIST

National Mission for Clean Ganga

Format for Submission of Monthly Progress Report by States/UTs
(Hon'ble NGT in the matter of OA No.673/2018 dated 06.12.2019)
RIVER PAMBA, PATHANAMTHITTA

S. No.	Activity to be monitored	Timeline	Submission of progress by State/UT-Compliance status
1	Ensure 100% treatment of sewage at least in-situ remediation	31.03.2020	Major hospital/hotel in the area established & are operating ETP regularly and it is monitored by the Board.
	Commencement of setting up of STPs and connecting all the drains and other sources of generation of sewage to the STPs must be ensured	31.03.2020	STP not required. Action is being taken for installation of screening, septic tank & disinfection systems for storm water drains in Mannar & Parumala town.
2	Timeline for completing all steps of action plans including completion of setting up STPs and their Commissioning	31.03.2020	Not complied as it is in preliminary stage.
5	Chief Secretaries may set up appropriate monitoring mechanism at state level • Specifying accountability of nodal authorities not below the Secretary level • Chief Secretaries may have an accountable person attached in their office for this purpose	22.01.2020	Not applicable. District Level Technical Committee formed and is monitoring regularly.
	• Monitoring at State level must take place	-	Fortnightly Commencing 21.12.2019
6	Progress report may be furnished by the State/UTs to • Secretary, Ministry of Jal Shakti • Member Secretary, CPCB	Monthly (preferably before 20th of every month)	

6.1	Progress Report may be comprised of details along with completion timelines on: (I) Identification of polluting sources including drains contributing to river pollution and action as per NGT order on in-situ treatment. (II) <u>Status of STPs, I&D and sewerage networks</u> Details of Existing Infrastructure, Gap Analysis, Proposed along with completion timeline (III) <u>Status of CETPs</u> Details of Existing CETP and ETP Infrastructure, Gap Analysis, Proposed along with completion timeline, No. of industries and complying status (iv) <u>Status of Solid Waste Management & Details of Processing Facilities</u> Details of Existing Infrastructure, Gap Analysis, Proposed along with completion timeline (v) Latest water quality of polluted river, its tributaries, drains with flow details and ground water quality in the catchment of polluted river; (vi) Preventing dumping of waste and scientific waste management including bio-medical waste, plastic waste and decentralizing waste processing, including waste generated from hotels, Ashrams, etc. (vii) Ground water regulation (viii) Adopting good irrigation practices		Revised action plan already submitted No sewerage system .STP is not required as the towns on the polluted river stretches are very small. NA Consent to Establish issued for rendering plant of Thiruvalla municipality.MCF and RRF already formed and working.Thumboormuzhi model aerobic composting established. Attached. Rendering Plant coming up at Thiruvalla Town will help to reduce tendency of dumping slaughter house waste in water bodies Not much problem in the area Proposal submitted by Irrigation dept. waiting for approval

	(ix) Protection and management of food plain Zones (FPZ) (x) Rain water harvesting (xi)Maintaining minimum Environmental flow of river (xii) Plantation on both sides of the river (xiii)Setting up biodiversity parks on flood plains by removing encroachment		-do- 25 sites identified for dug well recharge through rain water harvesting Minimum flow is there in the river Proposal submitted by Irrigation dept. waiting for approval -do-

The analysis reports for the months of August, 2020 are attached herewith.

Environmental Engineer

22.09.2020 Kerala State Pollution Control Board,Pathanamthitta

ACTION PLAN FOR RIVER PAMBA, KERALA

No. (as per Action Plan)	Activity	Implementing agency	Time line	Progress in the month of July	Progress in the month of August	% works completed	Details of works remaining
A(a)	No industries	-	-	-	-	-	-
A(a)	Monitorng of river water quality	Kerala State Pollution Control Board	Continuing project				
C(ii)	Establishment of de-centralized solid waste treatment facility	Mannar Panchayat, Kadapra/ Niranam Panchayath	31.03.2021		Rs . 1360000/- is allocated for the installation of Aerobic compost unit in Mannar GP in the current fiscal year and quotation is given for the setting up of Aerobic compost unit.		
C	Establishment of Material Collection Facility	Mannar Panchayat, Kadapra/ Niranam Panchayath	31.03.2021		Haritha Karma Sena (HKS) has been constituted in		

					all wards of Mannar GP for the door to door collection of solid non-bio degradable waste materials. Viability Grant of Rs. 417150 /- is allocated for the functioning of HKS during this fiscal year. Suitable place for the setting up of MCF has been identified and Rs 10,00,000 has been allocated for the MCF.		
C	Resource Recovery Facility	Mannar Panchayat, Kadapra/ Niranam Panchayath	31.03.2021		Not included in the current Annual Plan of Mannar GP		

C	Installing household and community level solid waste management units	Mannar Panchayat	31.03.2021		Not included in the current Annual Plan of Mannar GP		
C	Door to door collection and transportation of municipal solid waste	Mannar Panchayat	31.03.2021				
C	Construction of small sewage treatment plant with screening, septic tank and disinfection to the storm water drain of Parumala Town	Kadapra Panchayat	31.12.2020	-	-		
C	Construction of small sewage treatment plant with screening, septic tank and disinfection to the storm water drain of Mannar Town	Mannar Panchayat	31.12.2020		Not included in the current Annual Plan of Mannar GP		
C	Construction of compound wall with fencing	Irrigation department	31.03.2021		Estimates (Rs 135 lakhs) are submitted to Chief Engineer, Irrigation administration TVM for getting financial sanction		
C	Removing light jungle and muddies from river courses	Irrigation department	31.03.2021		Estimates (Rs 290 lakhs) are		

C	Electrical-Light arrangements and Surveillance cameras	Irrigation department	31.03.2021		submitted to Chief Engineer, Irrigation administration TVM for getting financial sanction		
C	Regualting activites in flood plain zone, protection and management of flood plain zone	Irrigation department	31.03.2021		-		
	Greenery developmentPlantation plan. Plantation on both sides of the river, setting up biodiversity parks on flood plains by removing encroachment	Irrigation department	31.03.2021		Included in the estimate of Rs.290 lakhs		
C (b) (ii)	Green Protocol implementation in all Offices institution & Public function	Mannar, Kadapra/ Niranam Panchayat	31.05.2020		Green Protocol is being observed in Mannar GP and other offices as well as public functions . . But no Project is included in the current Annual Plan of		

					Mannar GP for this. Regularly monitored in Kadapra panchayat		
D(a)	Issues relating to E-flow, maintaining minimum environmental flow of river (by having watershed management provisions)	Irrigation department	30.11.2020				
D (b)	Irrigation practices	Irrigation department	30.04.2020		-		
E	Awareness programmes for sections of public	Kerala State Pollution Control Board	31.05.2020		-		
C	Management of municipal, plastic, hazardous, biomedical and electrical waste	LSGD	31.03.2021		Not included in the current Annual Plan of Mannar GP		

ACTION BY GROUND WATER DEPARTMENT

Sl. No.	Ref para item nos as per NGT Order no.673/2018 dated 20.09.2018	Activity	Progress in the month of July	Progress in the month of August	% works completed	Details of works remaining
1	B(i)	Ground Water resources and regulation of ground water extraction by industries particularly in over exploited as critical		Safe category		

		zones/blocks				
2	B(ii)	Ground water recharging / rain water harvesting		25 sites identified for dug well recharge through rain water harvesting		
3	B(iii)	Periodic ground waste quality assessment and remedial actions in case of contaminated ground water tube wells/bore wells or hand pumps		-		
4	B(iv)	For regulating use of ground water for irrigation purpose, adopting good irrigation practices		-		

WATER QUALITY DATA OF POLLUTED RIVER STRETCHES AUGUST - 2020

DISTRICT OFFICE, PATHANAMTHITTA

Date of Sampling: 20.08.2020

Sl.No	PARAMETERS	THAKAZHY	EDATHUA	MANNAR
1	Temperature ,°C	29	29	29
2	pH	6.8	6.9	6.3
3	Turbidity ,NTU	2.3	1.8	2.2
4	Electrical Conductivity ,µS/cm	50.61	49.76	58
5	DO, mg/L	6.6	6.1	5.2
6	BOD, mg/L	1.0	0.9	1.1
7	NH_3N, mg/L	0.131	0.069	BDL
8	Nitrate , mg/L	0.088	0.0113	0.172
9	Chloride mg/L,	14	10	10
10	Phosphate , mg/L	-	-	-
11	Total Alkalinity, mg/L	9	11	11
12	Total Hardness, mg/L	26	30	22
13	Calcium , mg/L	18	18	14
14	Magnesium, mg/L	8	12	8
15	Sodium, mg/L	7.143	4.981	5.3
16	Pottassium , mg/L	0.833	0.613	0.53
17	Boron , mg/L	-	-	-
18	SAR	0.6	0.40	0.491
19	TC , CFU/100mL	220	390	300
20	FC, CFU/100mL	80	100	100
21	FS, CFU/100mL	NIL	NIL	NIL

Beena.V.R

BEENA V.R

Assistant Scientist

National Mission for Clean Ganga

Format for Submission of Monthly Progress Report by States/UTs

(Hon'ble NGT in the matter of OA No.673/2018 dated 06.12.2019)

RIVER MANIMALA, ALAPPUZHA

S. No.	Activity to be monitored	Timeline	Submission of progress by State/UT- Compliance status
1	Ensure 100% treatment of sewage at least in-situ remediation	31.03.2020	NA
	Commencement of setting up of STPs and connecting all the drains and other sources of generation of sewage to the STPs must be ensured	31.03.2020	NA
2	Timeline for completing all steps of action plans including completion of setting up STPs and their Commissioning	31.03.2021	NA

5	Chief Secretaries may set up appropriate monitoring mechanism at state level • Specifying accountability of nodal authorities not below the Secretary level • Chief Secretaries may have an accountable person attached in their office for this purpose	22.01.2020 22.01.2020	NA
	• Monitoring at State level must take place	Fortnightly commencing 21.12.2019	NA
6	Progress report may be furnished by the State/UTs to • Secretary, Ministry of Jal Shakti • Member Secretary, CPCB	Monthly(preferably before 20th of every month)	NA

6.1	Progress Report may be comprised of details along with completion timelines on:		NA
	(I) Identification of polluting sources including drains contributing to river pollution and action as per NGT order on in-situ treatment.	2019-2020	Drains contributing to river pollution where identified. The drains are seasonal and water quality is above the require limit, no insitu treatment is required.
	(II) <u>Status of STPs, I&D and sewerage networks</u> Details of Existing Infrastructure, Gap Analysis, Proposed along with completion timeline	2020-2021	Proposal for setting up an FSTP in Chengannur is initiated.
	(III) <u>Status of CETPs</u> Details of Existing CETP and ETP Infrastructure, Gap Analysis, Proposed along with completion timeline, No. of industries and complying status	-	Since the area does not contain any industry and so no requirement of any CETP, this action point is revised.
	(iv)<u>Status of Solid Waste Management & Details of Processing Facilities</u> Details of Existing Infrastructure, Gap Analysis, Proposed along with completion timeline	-	The adjoining local bodies are in the stage of developing and establishing adequate solid waste management facilities also the solid waste dumping issues were not identified in the stretch during the field visit held during past 1 year.
	(v) Latest water quality of polluted river, its tributaries, drains with flow details and ground water quality in the catchment of polluted river;	2019-2020	Water quality analysis result of the stretch upto September is enclosed.

	(vi)Preventing dumping of waste and scientific waste management including bio-medical waste, plastic waste and decentralizing waste processing, including waste generated from hotels, Ashrams, etc.	2019-2020	Awareness campaign to be initiated.
	(vii)Ground water regulation	2020-2021	No ground water pollution is noted in the area, so action yet to be initiated.
	(viii) Adopting good irrigation practices	2020-2021	Adopted.
	(ix) Protection and management of food plain Zones (FPZ)	2020-2021	Action will be initiated.
	(x) Rain water harvesting	2020-2021	Action will be initiated.
	(xi)Maintaining minimum Environmental flow of river	2020-2021	Action will be initiated.
	(xii) Plantation on both sides of the river	2020-2021	Action will be initiated.
	(xiii)Setting up biodiversity parks on flood plains by removing encroachment	2020-2021	Action will be initiated.

ACTION PLAN FOR RIVER MANIMALA, KERALA

No. (as per Action Plan)	Activity	Implementing agency	Time line	Progress in the month of July	Progress in the month of August	% works completed	Details of works remaining
A(a)	Monitorng of river water quality	Kerala State Pollution Control Board	Continuing project	Result attached	Result attached		
A(b)	Rendering Plant at Eraviperoor or Thiruvalla	Eraviperoor/ Thiruvalla local body	31.03.2021	Nil	Nil	0 %	Work to be initiated.
C(ii)	Fencing of bridges, desilting, dredging and protection works, surveillance cameras at vantage points	Irrigation department	31.03.2021	Nil	Nil	0 %	Work to be initiated.
C	Preventing illegal discharge of septage and other waste water into the river. Formation of River Protection Group	Panchayath, Police , KSPCB	31.05.2020.	Nil	Nil	Not applicable.	Work pending due to covid pandemic.
C	Greenery developmentPlantation on both sides of the river, setting up biodiversity parks in flood plains and removing encroachment	Irrigation department in association with panchayath	31.03.2021	Nil	Nil	Nil	Yet to be initiated.
C(b)(ii)	Green Protocol implementatio n in all offices, institution & public functions	Kalloopara, Eraviperoor, Puramattom, Kaviyoor, Peringara, Kuttoor panchayaths	31.03.2020	Information not available.			

D(a)	Issues relating to E-flow, maintaining minimum environmental flow of river (by having watershed management provisions)	Irrigation department, Hydrographic survey department	31.03.2021	-	-	-	Work to be initiated.
C(ii)	Establishment of decentralized solid waste treatment facilities	Kalloopara, Eraviperoor, Puramattom, Kaviyoor, Peringara, Kuttoor panchayaths	31.12.2020	To be obtained from pathanamthitta district.			
C	Installing household & community level solid and domestic sewage waste management	Kalloopara, Eraviperoor, Puramattom, Kaviyoor, Peringara, Kuttoor panchayaths	31.12.2020				
C	Door to door collection of solid waste & Material Collection Facilities (MCF) & Resource Revcovery Facilities (RRF)	Kalloopara, Eraviperoor, Puramattom, Kaviyoor, Peringara, Kuttoor panchayaths	31.12.2020				

ACTION BY GROUND WATER DEPARTMENT(To be obtained from pathanamthitta district)

Sl. No	Ref para item nos as per NGT Order no.673/2018 dated 20.09.2018	Activity	Timeline	Progress in the month of July	Progress in the month of August	% works completed	Details of works remaining
1	B(i)	Ground Water resources and regulation of ground water extraction by industries particularly in over exploited as critical zones/blocks	31.03.2021				
2	B(ii)	Ground water recharging / rain water harvesting in Govt offices	31.03.2021				

3	NGT order in O.A no.496/2016 Identification of illegal bore wells in the catchment area.	NGT order in O.A no.496/2016 Identification of illegal bore wells in the catchment area.	31.03.2021				

ANALYSIS RESULT OF KALLOOPARA-2020

Parameters	Unit	MONTHS								
		JAN	FEB	MAR	APR	MAY	JUN	JULY	AUG	SEP
PH	-	6.8	6.9	6.9	7.1	6.6	6.8	6.7	7.8	6.9
Conductivity	µS/cm	227	246	258	242	295	199	254.24	224.6	164
Turbidity	NTU	0.9	0.9	0.9	0.9	1.1	0.9	1	0.8	BDL
DO	mg/l	8.1	8.8	6.9	7.8	7.6	7.2	6.9	5.9	6.2
BOD	mg/l	2.9	3.1	2.7	3.0	3.2	1.8	1.2	1.7	2.4
COD	mg/l	8.0	12.0	16.0	8.0	16.0	4.0	4	8	16
Chloride	mg/l	40.0	50.0	50.0	50.0	60.0	30.0	60	30	20
Sulphate	mg/l	9.8	9.9	10.4	9.6	6.3	3.8	1.74	37.31	21.6
Phosphate	mg/l	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Nitrate Nitrogen	mg/l	0.15	0.18	0.19	0.01	0.09	0.24	0.173	0.134	0.0841
Amm. Nitrogen	mg/l	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Alkalinity	mg/l	40.0	50.0	50.0	60.0	40.0	60.0	50	30	20
T.Hardness	mg/l	40.0	60.0	70.0	70.0	70.0	60.0	80	70	50
Ca. Hardness	mg/l	20.0	30.0	40.0	40.0	40.0	40.0	40	40	30
Mg. Hardness	mg/l	20.0	30.0	30.0	30.0	30.0	20.0	40	30	20
T D S	mg/l	132.4	161.4	182.6	171.6	174.8	136.3	148.2	141.6	111
T F S	mg/l	81.60	93.21	95.82	91.74	96.40	93.42	97.42	92.72	88.2
Fluoride	mg/l	0.80	0.80	0.80	0.8	0.90	0.52	0.572	0.082	0.053
Sodium	mg/l	25.1	26.4	27.0	25.06	22.1	17.3	19.6	13.8	11.2
Potasssium	mg/l	7.2	7.5	7.7	6.4	5.3	2.8	4.2	3.8	3.1
TSS	mg/l	44.20	46.23	42.80	43.68	47.62	44.60	46.78	38.6	31.6
Tcoli	No/100ml	500	900	700	500	200	200	500	900	1700
Fcoli	No/100ml	300	400	300	200	100	100	200	500	900
Boron	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
TKN	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

ANALYSIS RESULT OF THONDRA -2020

Parameters	Unit	MONTHS								
		JAN	FEB	MAR	APR	MAY	JUN	JULY	AUG	SEP
PH	-	6.8	6.8	6.8	6.9	6.5	6.9	6.8	7.4	6.9
Conductivity	µS/cm	217	237.06	280	248	260	202	286.7	206.5	156
Turbidity	NTU	0.8	0.9	0.9	0.7	0.9	0.8	0.9	1	BDL
DO	mg/l	6.1	7.6	8.2	6.9	6.4	6.8	7.2	7.6	7.2
BOD	mg/l	1.4	2.6	2.1	1.9	1.6	1.8	0.9	1.5	2.6
COD	mg/l	12.0	20	16.0	16.0	8.0	4.0	8	8	16
Chloride	mg/l	40.0	60	70.0	40.0	50.0	40.0	70	50	20
Sulphate	mg/l	10.2	10.24	11.0	10.3	8.0	3.2	1.86	0.953	19.6
Phosphate	mg/l	BDL	BDL	0.1	BDL	BDL	BDL	BDL	BDL	BDL
Nitrate Nitrogen	mg/l	0.13	0.1363	0.14	0.01	0.02	0.17	0.182	0.14	0.054
Amm. Nitrogen	mg/l	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Alkalinity	mg/l	40.0	50	60.0	70.0	50.0	70.0	40	50	30
T.Hardness	mg/l	40.0	70	90.0	70.0	60.0	80.0	90	90	60
Ca. Hardness	mg/l	20.0	30	50.0	40.0	30.0	30.0	50	60	30
Mg. Hardness	mg/l	20.0	40	40.0	30.0	30.0	50.0	40	30	30
T D S	mg/l	138.6	167.2	198.4	170.2	173.6	142.4	176.4	142.34	108
T F S	mg/l	107.60	114.82	126.36	108.20	112.40	106.32	110.2	106.4	77.8
Fluoride	mg/l	0.80	0.8	0.80	0.80	0.90	0.69	0.524	0.053	0.032
Sodium	mg/l	54.4	27.84	28.5	25.8	24.6	16.7	18.7	11.2	10.6
Potasssium	mg/l	5.8	6.2	6.8	5.1	4.9	3.2	3.8	2.1	1.8
TSS	mg/l	31.80	43.2	45.80	42.82	34.20	31.60	36.4	31.2	26.8
Tcoli	No/100ml	700	1000	1500	800	200	300	400	1100	1200
Fcoli	No/100ml	400	500	800	300	100	200	400	600	700
Boron	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
TKN	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	

National Mission for Clean Ganga

Format for Submission of Monthly Progress Report by States/UTs
(Hon'ble NGT in the matter of OA No.673/2018 dated 06.12.2019)
RIVER CHITHRAPUZHA. ERNAKULAM

S. No.	Activity to be monitored	Timeline	Submission of progress by State/UT-Compliance status
1	Ensure 100% treatment of sewage at least in-situ remediation		Major units have own treatment facility
	Commencement of setting up of STPs and connecting all the drains and other sources of generation of sewage to the STPs must be ensured		Not reported any progress by Thrippunithura Municipality
2	Timeline for completing all steps of action plans including completion of setting up STPs and their Commissioning	3 years (Thrippunithura Municipality)	Proposed to construct Combined STP with the Thrikkakara Municipality in Brahmapuram Plant(for both Municipalities)
5	Chief Secretaries may set up appropriate monitoring mechanism at state level • Specifying accountability of nodal authorities not below the Secretary level • Chief Secretaries may have an accountable person attached in their office for this purpose		
	• Monitoring at State level must take place		District level committee monitoring

			regularly
6	Progress report may be furnished by the State/UTs to • Secretary, Ministry of Jal Shakti • Member Secretary, CPCB		

6.1	Progress Report may be comprised of details along with completion timelines on: (I) Identification of polluting sources including drains contributing to river pollution and action as per NGT order on in-situ treatment. (II) <u>Status of STPs, I&D and sewerage networks</u> Details of Existing Infrastructure, Gap Analysis, Proposed along with completion timeline (III) <u>Status of CETPs</u> Details of Existing CETP and ETP Infrastructure, Gap Analysis, Proposed along with completion timeline, No. of industries and complying status (iv) <u>Status of Solid Waste Management & Details of Processing Facilities</u> Details of Existing Infrastructure, Gap Analysis, Proposed along with completion timeline	Thrippunithura Municipality Thrippunithura Municipality	**2 persons identified and Fine Imposed Amount – 30,000** Submitted earlier Submitted earlier **Plastic Waste given to a Government Approved agency for recycling processing and Bio waste processed in Brahmapuram Plant.**

	(v) Latest water quality of polluted river, its tributaries, drains with flow details and ground water quality in the catchment of polluted river;		Analysis report by KSPCB is attached (Annexure-I)
	(vi)Preventing dumping of waste and scientific waste management including bio-medical waste, plastic waste and decentralizing waste processing, including waste generated from hotels, Ashrams, etc.	Thrippunithura Municipality	**Bio Medical waste collect to IMAGE and plastic waste given to government approved agencies, bio waste processing to Brahmapuram Plant.**
	(vii)Ground water regulation	Ground Water Department	As per Groundwater resources of Kerala, 2017 estimate a total number of 3 blocks (Edapally,Vadavukodu,Vazhakkulam) comes under the Chithra puzha river basin. All the blocks in the river stretch are safe with stage of groundwater extraction ranges from 25.38% to 56.63%
	(viii) Adopting good irrigation practices		**Annexure II**

	(ix) Protection and management of food plain Zones (FPZ)		Not submitted progress details by Irrigation Department
	(x) Rain water harvesting	Ground Water Department	The average groundwater level ranges from 1.85mbgl -9.2 mbgl. Groundwater Department not yet proposed any recharge structures in this area
	(xi)Maintaining minimum Environmental flow of river		Not reported any progress by Irrigation Department
	(xii) Plantation on both sides of the river	Thrippunithura Municipality	**Done**
	(xiii)Setting up biodiversity parks on flood plains by removing encroachment	Thrippunithura Municipality	**Completed**

ACTION PLAN FOR RIVER CHITHRAPUZHA, KERALA

SHORT TERM MEASURES

No. (as per Action Plan)	Activity	Implementing agency	Time line	Progress in the month of July	Progress in the month of August	% works completed	Details of works remaining
(1) Drain joining Chithrappuzha (near Brahmapuram dumping yard) (Near FACT CD)							
C (ii)	Restricting seepage of leachate of plastic dumped in the dumping yard	Kochi Corporation	3 years	Annexure III			
Aa (iv)	Effluent monitoring from FACT	KSPCB	Periodical	Conducted	Conducted	Conducting Periodical monitoring	Conducting Periodical monitoring
Aa (iv)	Periodical Monitoring	KSPCB	Periodical	Conducted	Conducted	-do-	-do-
(2) Drain from Cochin Refinery area							
Aa (iv)	Surveillance to restrict the dumping of wastes into the river and its branches	Vadavucode – Puthencruz Panchayat with the help of Police	Periodical	Not submitted			
A(b)	Sanitation Survey	Vadavucode – Puthencruz Panchayat	3 months	Not submitted			
E	Periodical Cleaning of Chithrapuzha	Irrigation Department	Twice in 3 years	Annexure II			

	Already implemented Effluent Treatment facility in Cochin Refinery and periodical monitoring are ongoing	KSPCB		Ongoing			
(3) Athikkayi branch (Provided temporary bund in joining section to check salinity intrusion)							
A(b)	Identification of major pollution causing units(Apartm ents, hospitals, service stations, markets and industries) in upstream	Thrikkakkara Municipality KSPCB	3 months	Ongoing			
Aa(iv)	Surveillance to restrict the dumping of wastes into the river and its branches	Thrikkakkara Municipality with the help of Police	Periodical Monitoring	Ongoing			
Aa(iv)	Periodical Monitoring	KSPCB	Periodical	Conducted	Conducted	Conducting Periodical monitoring	Conducting Periodical monitoring
A(b)	Sanitation Survey	Thrikkakara Municipality	6 months	Not submitted by Municipality			
E	Periodical Cleaning	Irrigation Department	Once in a year	Annexure II			
(4) Drain joining Chithrappuzha from CSEZ (Chittethukara)							
A(b)	Ensure proper functioning of ETP in CSEZ	KSPCB	Periodical	Conducted	Conducted	Conducting Periodical monitoring	Conducting Periodical monitoring
A(b)	Sanitation Survey and periodical cleaning	Thrikkakara Municipality	6 months	Not submitted by Municipality			

Aa(iv)	Periodical Monitoring	KSPCB	Periodical	Conducted	Conducted	Conducting Periodical monitoring	Conducting Periodical monitoring
(5) Vettuvelikkadavu (Konothupuzha joining Chithrappuzha)							
A(b)	Identifying and closing of all unauthorized outlets into the stream joining the river	Thripunithura Municipality	6 months	Not submitted by Municipality			
A(b)	Sanitation Survey	Thripunithura Municipality	3 months	Not submitted by Municipality			
Aa(iv)	Periodical Monitoring	KSPCB	Periodical	Conducted	Conducted	Conducting Periodical monitoring	Conducting Periodical monitoring
C(ii)	Surveillance to restrict the dumping of wastes into the river and its branches	Thripunithura Municipality with the help of Police	6 months	Not submitted by Municipality			
E	Cleaning of Konothupuzha (work Proposal already submitted by Minor Irrigation)	Irrigation Department (Minor Irrigation)	Twice in a year	Cleaning works are ongoing by Irrigation Dept and Thripunithura Municipality; Photos attached. The KSPCB has issued letter to the local bodies for identifying and blocking all unauthorized sewage outlets leading to the river. Apartment complexes and other establishments on the Banks of the river where the STPs are not working properly have been served with show cause notices;			

Main Stretch (Kadambrayar-Chithrappuzha Confluence point to Irumpanam)				
E	Periodic Cleaning	Irrigation Department	Once in a year	Annexure II
C(ii)	Surveillance to restrict the dumping of wastes into the river	Vadavucode - Puthercruz with the help of Police	Periodi cal Monito ring	Ongoing
		Thripunithura Muncipality with the help of Police	6 months	Ongoing
Aa(iv)	River water quality monitoring	KSPCB	Ongoing; monthly frequency	Ongoing
A(b)	Inspection and effluent quality monitoring of the flats, industrial units, service stations, hospitals, hotels etc	KSPCB	Ongoing	Ongoing
C(ii)	Surveillance to restrict dumping of waste to the river, Sanitation survey (with the help of Police)	Vadavukad Puthenkruze Panchayath	6 months	Surveillance : Ongoing

LONG TERM MEASURES

No. (as per Action Plan)	Activity	Implementing agency	Time line	Progress in the month of July	Progress in the month of August	% works completed	Details of works remaining
E	Provide inspection bund for Chithrapuzha	Irrigation Department	3 years	Annexure II			
A(b)	Additional STP requirement (if needed)	Thrikkakkara Municipality, Thripunithura Municipality	3 years			Not submitted	
	Restriction of illegal dumping of Septage in to the river	Police	--	--	--	--	--
	Flood Plain Zone(Management and Protection) Preparation of Inundation maps	Irrigation Department	3 years	Not submitted			

ACTION BY GROUND WATER DEPARTMENT

Sl. No.	Ref para item nos as per NGT Order no.673/2018 dated 20.09.2018	Activity	Progress in the month of July	Progress in the month of August	% works completed	Details of works remaining
1	B(i)	Ground Water resources and regulation of ground water extraction by industries particularly in over exploited as critical zones/blocks	Ground Water Department: As per Groundwater resources of Kerala, 2017 estimate a total number of 3 blocks (Edapally,Vadavukodu,Vazhakkulam) comes under the Chithrapuzha river basin. All the blocks in the river stretch are safe with stage of groundwater extraction ranges from 25.38% to 56.63%; The total irrigation draft in the area ranges from 172.32 - 1028.5 ha.m.	As per Groundwater resources of Kerala, 2017 estimate a total number of 3 blocks (Edapally,Vadavukodu,Vazhakkulam) comes under the Chithra puzha river basin. All the blocks in the river stretch are safe with stage of groundwater extraction ranges from 25.38% to 56.63%; The average groundwater level ranges from 1.85mbgl -9.2 mbgl. Groundwater Department not yet proposed any recharge structures in this area.	Not submitted	Not submitted
2	B(ii)	Ground water recharging / rain water harvesting	--	--	Not submitted	Not submitted
3	B(iii)	Periodic ground waste quality assessment and remedial actions in case of contaminated ground water tube wells/bore wells or hand pumps	Not submitted			

4	B(iv)	For regulating use of ground water for irrigation purpose, adopting good irrigation practices	Not submitted

ANNEXURE-I(KSPCB)

Analysis Report(JULY 2020)

Sl.No	Parameters	Values
1	Temperature, ^{0}C	27
2	pH	6.5
3	Conductivity, µmhos/cm	209
4	Turbidity, NTU	11.6
5	Total Alkalinity, as CaCO3	22
6	Chloride, mg/l	29
7	COD, mg/l	12
8	TKN, mg/l	2.13
9	Ammoniacal-N, mg/l	0.16
10	Hardness, as CaCO3 mg/l	36

11	Calcium, as CaCO3 mg/l	6
12	Magnesium as CaCO3, mg/l	30
13	Sulphate, mg/l	27.6
14	Sodium, mg/l	20.3
15	Total Dissolved Solids, mg/l	130
16	Total Fixed Solids, mg/l	110
17	Total Suspended Solids, mg/l	35
18	Phosphate, mg/l	2.43
19	Boron, mg/l	0.09
20	Potassium, mg/l	3.04
21	BOD, mg/l	3.2
22	Fluoride, mg/l	0.6
23	Dissolved Oxygen, mg/l	2.7
24	Nitrate-N, mg/l	1.76
25	Total Coliform, MPN/100 ml	4300
26	Fecal Coliform, MPN/100 ml	3100
27	Fecal Streptococci	250

Analysis Report(AUGUST 2020)

Sl. No.	Parameters	Irumpanam
1	Temperature, 0C	27
2	pH	6.7
3	Conductivity, µmhos/cm	110
4	Turbidity, NTU	2.9
5	Total Alkalinity, as CaCO3	26
6	Chloride, mg/l	12
7	COD, mg/l	3.2
8	TKN, mg/l	0.42
9	Ammoniacal-N, mg/l	0.01
10	Hardness, as CaCO3 mg/l	24
11	Calcium, as CaCO3 mg/l	13
12	Magnesium as CaCO3, mg/l	11
13	Sulphate, mg/l	11.2

14	Sodium, mg/l	8.25
15	Total Dissolved Solids, mg/l	70
16	Total Fixed Solids, mg/l	58
17	Total Suspended Solids, mg/l	12
18	Phosphate, mg/l	0.67
19	Boron, mg/l	0
20	Potassium, mg/l	2.17
21	BOD, mg/l	1.5
22	Fluoride, mg/l	0.11
23	Dissolved Oxygen, mg/l	2.8
24	Nitrate-N, mg/l	0.32
25	Total Coliform, MPN/100 ml	7900
26	Fecal Coliform, MPN/100 ml	4700
27	Fecal Streptococci	350

ANNEXURE-II
(IRRIGATION DEPARTMENT)

	Irrigation Section Champakkara - Works Included in Chithrappuzha Action plan				
SL No.	Name of work	Price ID	Amount in Lakhs	Timeline (Duration of Work)	Present Status
	Short Term Works				
1	IWT Works - Desilting of Chithrapuzha River near Kochin Refinery from Mamala bridge to Chithrapuzha bridge in Ernakulam District - Reach I	2020/618/IA	49.18	One year	Work Tendered
2	IWT Work - Desilting of Chithrapuzha River from Chithrapuzha bridge to Railway bridge in Ernakulam District - Reach II	2020/735/IA	77.20	One year	Estimate submitted to CE
3	IWT Work- Desilting of Chithrapuzha River from Railway bridge to Kozhichira bund in Ernakulam District- - Reach III	2020/740/IA	88.95	One year	Estimate submitted to CE

	Long Term works				
4	NGT- IWT Works - Soil Investigation works for the construction of Walk way along Chithrapuzha River from Mamala to Champakkara canal	2020/1243/IA	17.74	Nine Months	Estimate submitted to CE (As a preliminary step Soil investigation estimate is submitted)
	Total		233.07		

Status of clearing work of Konothupuzha arranged by Irrgation department

KONOTHUPUZHA NEAR ALIYAR BRIDGE TRIPPUNITHURA- STATUS BEFORE WORK

STATUS NEAR ALIYAR BRIDGE- AFTER CLEARING

DURING EXECUTION NEAR STAR HOMES, TRIPPUNITHURA

REACH NEAR STAR HOMES AFTER CLEARING

ANNEXURE-III

JULY 2020

Sl. No.	Activity	Implementing agency	Cost (Rs. Cr)	Source of fund	Wheather project formulated (Y/N)	DPC approved	Started/ Not started	Remarks/STATUS
1	Restricting seepage of leachate of plastic dumped in the dumping yard	KSIDC, Government of Kerala	22	Govt fund	Yes	NA	Not started	Government took over the work of bio-mining from Kochi Corporation Vide G.O(Ms) No.8/2020/DMD dated 05/03/2020 assigning KSIDC to tender the work. Work was tendered on 20/03/2020.2 Bids received. None of them found qualified. KSIDC has now re-

								tendered the work on 24/06/2020 with last date for submission of bids on 04/09/2020.

Sl. No.	Activity	Implementing agency	Cost (Rs. Cr)	Source of fund	Whether Project formulated (Yes/ No)	DPC approved	Present status not started/ongoing
1	Provide proper facilities for restricting the seepage of leachate	Kochi Corporation	0.22	Plan fund	Yes	Yes	**Construction of leachate Collection tank completed**
2	Provide proper facilities for collecting and treating leachate	Kochi Corporation	1.27	Plan fund	Yes	Yes	Not started
3	Solid waste treatment facility at Brahmapuram/Waste to Energy plant	Kochi Corporation	300	PPP project	YES	NA	Govt. cancelled the contract with the concessionaire vide G.O (Rt)No. 805/2020/LSGD dated 30/4/2020 KSIDC has floated tender on 24/06/2020 with last date for submission of tenders on 27/08/2020

AUGUST 2020

Sl. No.	Activity	Implementing agency	Time line	Progress in the month of July	Progress in the month of August	% of works completed	Details of works remaining	Remarks/STATUS
1	Restricting seepage of leachate of plastic dumped in the dumping yard	KSIDC, Government of Kerala for Kochi Corporation	July 2021	Work tendered	3 Bids received. Tender Evaluation being done	NA	Work to be awarded.	Government took over the work of bio-mining from Kochi Corporation Vide G.O(Ms) No.8/2020/DMD dated 05/03/2020 assigning KSIDC to tender the work. Work was tendered on 20/03/2020.2 Bids received. None of them found qualified. KSIDC has now re-tendered the work on

								24/06/2020 with last date for submission of bids on 27/08/2020. 3 Bids were received. Tenders being evaluated and the tender process will be completed by 1st week of October.

Sl. No.	Activity	Implementing agency	Timeline	Progress in the month of July	Progress in the month of August	% of works completed	Present status not started/ongoing
1	Provide proper facilities for restricting the seepage of leachate	Kochi Corporation	APRIL 2020	NA	NA	100	**Construction of leachate Collection tank completed**
2	Provide proper facilities for collecting and treating leachate	Kochi Corporation	March 2021	Health Committee decided to take suggestion from Suchitwa mission regarding technology	Placed in the technical committee of Suchitwa Mission to decide the apt technology	NA	To prepare the DPR agencies were identified and work was awarded. DPR preparation will be resumed once Suchtiwa Mission finalises the technology to be used for leachate treatment plant.
3	Solid waste treatment facility at Brahmapuram/Waste to Energy plant	KSIDC for Kochi Corporation	December 2023	Tender process in progress	Tender process in progress. Last date for	NA	Govt. cancelled the contract with the concessionaire vide G.O (Rt)No.

					submission of bids was 14/09/2020		805/2020/LSGD dated 30/4/2020 KSIDC has floated tender on 24/06/2020 with last date for submission of tenders on 30/07/2020. As requested by the prospective bidders last date of submission of bids was extended till 14/09/2020. Tender procedures will be completed by 15/10/2020.

(TRIPUNITHURA MUNICIPALITY)

- The Secretary, Tripunithura Municipality informed that the progress of works mentioned in the action plan is behind the schedule because of the circumstances arised due to Covid-19 Pandemic.

National Mission for Clean Ganga

Format for Submission of Monthly Progress Report by States/UTs
(Hon'ble NGT in the matter of OA No.673/2018 dated 06.12.2019)
RIVER KADAMBRAYAR, ERNAKULAM

S. No.	Activity to be monitored	Timeline	Submission of progress by State/UT-Compliance status
1	Ensure 100% treatment of sewage at least in-situ remediation		Major units have own treatment facility
	Commencement of setting up of STPs and connecting all the drains and other sources of generation of sewage to the STPs must be ensured		Not reported any progress by Thrikkakkara Municipality
2	Timeline for completing all steps of action plans including completion of setting up STPs and their Commissioning		Not reported any progress by Thrikkakkara Municipality
5	Chief Secretaries may set up appropriate monitoring mechanism at state level • Specifying accountability of nodal authorities not below the Secretary level • Chief Secretaries may have an accountable person attached in their office for this purpose		
	• Monitoring at State level must take place		District level committee monitoring regularly
6	Progress report may be furnished by the State/UTs to • Secretary, Ministry of Jal Shakti • Member Secretary, CPCB	Monthly (preferably before 20th of every month)	

6.1	Progress Report may be comprised of details along with completion timelines on: (I) Identification of polluting sources including drains contributing to river pollution and action as per NGT order on in-situ treatment. (II) <u>Status of STPs, I&D and sewerage networks</u> Details of Existing Infrastructure, Gap Analysis, Proposed along with completion timeline (III) <u>Status of CETPs</u> Details of Existing CETP and ETP Infrastructure, Gap Analysis, Proposed along with completion timeline, No. of industries and complying status (iv) <u>Status of Solid Waste Management & Details of Processing Facilities</u> Details of Existing Infrastructure, Gap Analysis, Proposed along with completion timeline (v) Latest water quality of polluted river, its tributaries, drains with flow details and ground water quality in the catchment of polluted river;		Ongoing by KSPCB and Thrikkakkara Municipality Submitted earlier Submitted earlier Not submitted progress details by Thrikkakkara Municipality; Analysis report by KSPCB is attached (Annexure-I)

	(vi)Preventing dumping of waste and scientific waste management including bio-medical waste, plastic waste and decentralizing waste processing, including waste generated from hotels, Ashrams, etc.		Monitoring ongoing regularly;
	(vii)Ground water regulation		Ground Water Department : As per Groundwater resources of Kerala, 2017 estimate a total number of 2 blocks (Mulanthuruthi and Vadavukkodu) comes under the kadambrayar river basin. All the blocks in the river stretch are safe with stage of groundwater extraction ranges from25.38% to 68.01% The total irrigation draft in the area ranges from 531.54 to 745.74 ha.m;
	(viii) Adopting good irrigation practices		Irrigation Department : As per the work status by the dept, there is no further progress from July 2020; As per the letter dated 16.09.2020, cleaning works of Edachira Thodu joining kadambrayar is completed by Thrikkakkara Municipality;

	(ix) Protection and management of food plain Zones (FPZ)		Not submitted progress details by Irrigation Department
	(x) Rain water harvesting		Ground Water Department : : The pre-monsoon groundwater level of the area ranges from 4.43 to 5.38 mbgl. Groundwater Department has not yet proposed any recharge structures in this area
	(xi)Maintaining minimum Environmental flow of river		Not reported any progress by Irrigation Department
	(xii) Plantation on both sides of the river		Not reported any progress by Thrikkakkara Municipality
	(xiii)Setting up biodiversity parks on flood plains by removing encroachment		Not reported any progress by Revenue Department, Irrigation Department and Thrikkakkara Municipality

ACTION PLAN FOR RIVER KADAMBRAYAR, KERALA

SHORT TERM MEASURES

Short term plan

No. (as per Action Plan)	Activity	Implementing agency	Time line	Progress in the month of July 2020	Progress in the month of August 2020	% works completed	Details of works remaining
(1) Manakkakkadavu							
2.1.2 C(ii)	Surveillance to restrict the dumping of wastes into river and its branches	Kunnathunadu Panchayat and with the help of Police	As the post of the Panchayat president is vacant at present, the officials informed that fund for surveillance can be intimated only after the President has been elected	Monitoring on going; Instruction was given to local body by KSPCB to install Surveillance cameras on major waste dumping places; The	No further progress;	Not submitted by Kunnathu Nadu Panchayath	Not submitted by Kunnathu Nadu Panchayath

				Kadambrayar river shares the western boundary of Kunnathunadu Grama Panchayat for a stretch of approximately 6Kms. And 90% of this stretch consists of swamps , hence direct access to the river via land is ruled out. And in the remaining stretch, i.e., in and around Manakkakadvu bridge the DTPC operates a boat club with a riverside			

				walkway and park. Any kind of possible river polluting activities by the general public in this area is monitored by the erection of CCTV cameras provided with the CSR aid of Wonderla Amusements Park. Also the Police is conducting routine surveillance operation so as to prevent any possible illegal activities which pollutes the river. In			

				addition to these preventive measures, there operates a Ward Monitoring Committee under the supervision of Kunnathunadu Grama Panchayat Committee which ensures the prevention of polluting activities by the local people.			

(2) Canal joining Kadambrayar near Infopark Phase II							
No. (as per Action Plan)	Activity	Implementing agency	Time line	Progress in the month of July 2020	Progress in the month of August 2020	% works completed	Details of works remaining
2.2.1E	Cleaning of thodu	Kerala Irrigation Department & Vadavucode – Puthencruz Panchayat	6 months 6 months	Annexure II ---	No further progress; ----	Annexure II 0	Annexure II Clear the jungles, Desiliting,
2.2.3 C(ii)	Surveillance to restrict the dumping of wastes into river and its branches	Vadavucode – Puthencruz Panchayat with the help of Police	2 months	CCTV Camera installed preventing dumping of waste			
Main Stream (Manakkadavu to Kadambrayar-Chithrappuzha Confluence point) (Provided temporary bund (Kozhichira Bund)in Kadambrayar-Chithrappuzha joining section to check salinity intrusion)							
No. (as per Action Plan)	Activity	Implementing agency	Time line	Progress in the month of July	Progress in the month of August	% works completed	Details of works remaining
A(b)	Provide proper facilities for restricting the seepage of leachate	Kochi Corporation	Refer Annexure III	Refer Annexure III	Refer Annexure III	Refer Annexure III	Refer Annexure III

A(b)	Provide proper facilities for collecting and treating leachate	Kochi Corporation	Refer Annexure III	Refer Annexure III	Refer Annexure III	Refer Annexure III	Refer Annexure III
Action plan by Gramapanchayath							
No. (as per Action Plan)	Activity	Implementing agency	Time line	Progress in the month of July	Progress in the month of August	% works completed	Details of works remaining
E	Installation of CCTV camera At Manakkakadavu	Kunnathunadu	30.09.2019		CCTV Camera installed		
C(ii)	Vadavukad puthenkruze	Cleaning of Thodu	6 months	-	-	0	Clear the jungles, Desiliting,
C(ii)	Surveillance to restrict dumping of waste to the river and branches (with the help of Police)	Vadavukad puthenkruze	2 months	CCTV Camera installed preventing dumping of waste			
1. Long term Plan							
No. (as per Action Plan)	Activity	Implementing agency	Time line	Progress in the month of	Progress in the	% works completed	Details of works remaining

				July	month of August		
4.5 C(ii)	Solid waste treatment facility at Brahmapuram	Kochi Corporation	Three years DPR Preparation in 10 months (through consultants)	Refer Annexure III	Refer Annexure III	Refer Annexure III	Refer Annexure III
4.6 A(b)	Restriction of illegal dumping of septage in to the river	Police	As soon as possible	--	--	---	--

3. REVISED ACTION PLAN

No. (as per Action Plan)	Activity	Implementing agency	Time line	Progress in the month of July	Progress in the month of August	% works completed	Details of works remaining
3.1	Slaughter house and poultry waste Rendering plant	Thrikkakkara Municipality	To allot land for installing plant, Government procedure are on going	Not submitted			
3.2	Sanitation facility and treatment of waste water inthe markets Treatment plant Portable aerobic bins	Thrikkakkara Municipality	2020-21	Not submitted			

			2021-22	
3.3	Provide facility for the treatment of sewage, sullage and garbage generated Proposed places for the installation of Aerobins (1) Municipal office compound (2) NGO quarters (3) Kakkanad Market Near Eechamukku TV-Centre Anganavadi	Thrikkakkara Municipality	To allot land for installing plant, Government procedures are on going	Not submitted
3.4	Providing facility for restricting discharge of waste water from the surrounding houses to the river Outlet closing procedures are going on by issuing Notices	Thrikkakkara Municipality		Not submitted
3.5	Providing effluent treatment plant for industries No.of industries :75 no.s Total effluent treatment plant	Thrikkakkara Municipality		Not submitted

	required : Nil units						
3.6	Identification of illegal outlets into storm water drains and fine shall be imposed on such units – 30 units	Thrikkakkara Municipality		Not submitted			
3.7	Biodegradable waste management Bio-Composter – 2000 No.s Thumboormuzhi aerobic bins - 4 No.s Portable biogas – 1500 No.s Ring compost – 500 No.s Napkin destroyer – 6 No.s Viability gap Fund	Thrikkakkara Municipality		Not submitted			
4. MONITORING							
No. (as per Action Plan)	Activity	Implementing agency	Time line	Progress in the month of July	Progress in the month of August	% works completed	Details of works remaining
4.1	River water quality monitoring – Monitoring of water quality	Kerala State Pollution Control Board	Ongoing; Monthly frequency	Analysis Report attached Annexure I	Analysis Report attached Annexure I	Conducting Periodical monitoring	Conducting Periodical monitoring

4.2	Inspection and effluent quality monitoring of the flats, industrial units, service stations, hospitals, hotels etc Monitoring of establishments, service stations, flats, industrial units	Kerala State Pollution Control Board	Ongoing;	Conducted inspections	Conducted inspections	Conducting Periodical monitoring	Conducting Periodical monitoring
5. LONG TERM PLAN							
No. (as per Action Plan)	Activity	Implementing agency	Time line	Progress in the month of July	Progress in the month of August	% works completed	Details of works remaining
5.1	Additional STP requirement DPR Preparation in 6 months (through consultants) To allot land, Government Procedure are ongoing	Thrikkakkara Municipality	3 years	Not submitted			
5.2	Acquiring of land and rehabilitate families from the banks of River To allot land, Government Procedure are ongoing	District Collector, Thrikkakkara Municipality, Revenue Dept	5 years	Not submitted			

DESILTING AND DEVELOPEMENT							
No. (as per Action Plan)	Activity	Implementing agency	Time line	Progress in the month of July	Progress in the month of August	% works completed	Details of works remaining
5.3	Development package Inspection bund for Chithrapuzha and Kadambrayar are included in this package. For this project, preliminary investigation of site which includes survey of land to know its availability for formation of side bund which is to be provided with tiles. The project also includes side protection work of Chitrapuzha and Kadambrayar. Provision for handrails at the edge of the bund is given. Overall cost comes to 25	Irrigation department	3 years	Details submitted by Irrigation Dept is included in Annexure II			

	Crore. The work is being proposed urgently and will be submitted to higher authorities for financial sanction.			
5.4	Desilting and development It includes clearing and removing water hyacinth of Kadambrayar , Chitrapuzha and Edachirathodu near Infopark phase II. This is to be done periodically (every four months), depending on availability of fund.	Irrigation Department	1 year (periodical cleaning - 4 months x3)	Details submitted by Irrigation Dept is included in Annexure II
5.5	sheet piling and providing fencing Fencing is provided in Sl.no 5.3	Irrigation Department	1.5 years	Details submitted by Irrigation Dept is included in Annexure II
5.6	Development of river basin It includes cleaning and removal of water hyacinth from rivers and maintain its natural flow, depending on availability of fund.	Irrigation Department	1.5 years	Details submitted by Irrigation Dept is included in Annexure II

6. RECOMMENDATIONS BY KERALA STATE POLLUTION CONTROL BOARD

Activities for compliance with Solid Waste Management Rules, 2016; Bio-medical Waste Management Rules, 2016

No. (as per Action Plan)	Activity	Implementing agency	Time line	Progress in the month of July	Progress in the month of August	% works completed	Details of works remaining
6.1	Door-to-door collection and transportation of MSW **100% door to door collection** Proposed Kerala Solid Waste Management Authority	Thrikkakkara Municipality Local bodies of Census Town		Not submitted			
6.2	Modern Solid Waste Treatment Plant Proposed Kerala Solid Waste Management Authority	Thrikkakkara Municipality (To allot land, Government procedure are ongoing) Local bodies of Census Town		Not submitted			
6.3	Rendering plant for slaughter house/poultry wastes Proposed Kerala Solid	Thrikkakkara Municipality(To allot land, Government procedure are on going)		Not submitted			

	Waste Management Authority						
6.4	Common bio-medical waste treatment facility Proposed Kerala Solid Waste Management Authority	Health Department		Not submitted			
6.5	Regional sanitary landfill site identification and land acquisition Establishment and operation of Regional Sanitary Landfills Proposed Kerala State Waste Management Authority	District Collector Local bodies		Not submitted			
7.OTHER ASPECTS							
No. (as per Action Plan)	Activity	Implementing agency	Time line	Progress in the month of July	Progress in the month of August	% works completed	Details of works remaining

7.1	Flood plain zone management and E- flow maintaining Flood plain zone management & E-flow maintaining cleaning & desilting, depending on availability of fund. During summer season Irrigation Department Provides temporary bund to prevent the salt water intrusion due to tidal effects. To maintain natural flow, sluice gate is provided. During the low tide, the shutter of the sluice gate is kept open to maintain minimum flow	Irrigation Dept		Details submitted by Irrigation Dept is included in Annexure II
7.2	Development of bio diversity parks in banks	Thrikkakkara Municipality	1st Phase 2020-21 2nd Phase 2021-22	Not submitted

ANNEXURE-I(KSPCB)

Analysis Report(JULY 2020)

Sl. No.	Parameters	Brahmapuram	Manackakadavu
1	Temperature, 0C	28	27
2	pH	6.4	6.4
3	Conductivity, µmhos/cm	118	99
4	Turbidity, NTU	9.5	10.9
5	Total Alkalinity, as CaCO3	26	23
6	Chloride, mg/l	15	14
7	COD, mg/l	12	6.4
8	TKN, mg/l	0.21	0.53
9	Ammoniacal-N, mg/l	0.05	0.11
10	Hardness, as CaCO3 mg/l	21	20
11	Calcium, as CaCO3 mg/l	12	9
12	Magnesium as CaCO3, mg/l	9	11
13	Sulphate, mg/l	13.8	12.32
14	Sodium, mg/l	11.6	9.2
15	Total Dissolved Solids, mg/l	76	66
16	Total Fixed Solids, mg/l	65	52
17	Total Suspended Solids, mg/l	26	30
18	Phosphate, mg/l	0.01	0.05
19	Boron, mg/l	0.08	0.06
20	Potassium, mg/l	2.56	2.57
21	BOD, mg/l	3.6	2.5
22	Fluoride, mg/l	0.1	0.1
23	Dissolved Oxygen, mg/l	2.5	3.8
24	Nitrate-N, mg/l	0.13	0.26
25	Total Coliform, MPN/100 ml	4900	4900
26	Fecal Coliform, MPN/100 ml	2200	3500
27	Fecal Streptococci	200	270

Analysis Report(AUGUST 2020)

Sl. No.	Parameters	Brahmapuram	Manackakadavu
1	Temperature, ^{0}C	27	28
2	pH	6.8	6.5
3	Conductivity, µmhos/cm	120	73
4	Turbidity, NTU	13.3	11.1
5	Total Alkalinity, as CaCO3	30	20
6	Chloride, mg/l	9	7
7	COD, mg/l	6.4	6.4
8	TKN, mg/l	2	BDL
9	Ammoniacal-N, mg/l	1.61	0.04
10	Hardness, as CaCO3 mg/l	30	16
11	Calcium, as CaCO3 mg/l	10	8
12	Magnesium as CaCO3, mg/l	20	8
13	Sulphate, mg/l	11.9	5.2
14	Sodium, mg/l	6.24	4.15
15	Total Dissolved Solids, mg/l	68	40
16	Total Fixed Solids, mg/l	54	32
17	Total Suspended Solids, mg/l	20	18
18	Phosphate, mg/l	0.17	0.17
19	Boron, mg/l	0.07	0.01
20	Potassium, mg/l	2.04	1.42
21	BOD, mg/l	2.9	2
22	Fluoride, mg/l	0.05	0.04
23	Dissolved Oxygen, mg/l	6	4.8
24	Nitrate-N, mg/l	0.34	0.04
25	Total Coliform, MPN/100 ml	7900	3800
26	Fecal Coliform, MPN/100 ml	5800	2600
27	Fecal Streptococci	350	170

ANNEXURE-II
(IRRIGATION DEPARTMENT)

SL No.	Name of work	Price ID	Amount in Lakhs	Timeline (Duration of Work)	Present status
	Short Term Works				
1	Removal of water hyacinth from Kadambrayar upstream ecotourism to Kozhichira bund	2020/828/IA	48.57	One Year	Estimate submitted to CE
2	Desilting of Padathikkara Thodu near Infopark Phase II in Vadavucode puthencruz Panchayath	2020/741/IA	15.43	One Year	Estimate submitted to CE
3	Removal of water hyacinth from Edachira thodu from Brahmapuram bridge to Edachira road in Thrikkakara Muncipality	2020/829/IA	9.36	One Year	Estimate submitted to CE
4	Desilting of Athikkaly Thodu from Kalangad road to Champakkara canal in Thrikkakara Muncipality	2020/742/IA	38.94	One Year	Estimate submitted to CE
	Long Term works				
5	NGT- Soil Investigation Works for the construction of Walk way along Kadambrayar from Manakkakadavu bridge to Kozhichira bund	2020/1242/IA	16.25	Nine Months	Estimate submitted to CE (As a preliminary step Soil investigation estimate is submitted)
	Total		128.55		

ANNEXURE-III

JULY 2020

Sl. No.	Activity	Implementing agency	Cost (Rs. Cr)	Source of fund	Wheather project formulated (Y/N)	DPC approved	Started/ Not started	Remarks/STATUS
1	Restricting seepage of leachate of plastic dumped in the dumping yard	KSIDC, Government of Kerala	22	Govt fund	Yes	NA	Not started	Government took over the work of bio-mining from Kochi Corporation Vide G.O(Ms) No.8/2020/DMD dated 05/03/2020 assigning KSIDC to tender the work. Work was tendered on 20/03/2020.2 Bids received. None of them found qualified. KSIDC has now re-tendered the work on 24/06/2020 with

								last date for submission of bids on 04/09/2020.

Sl. No.	Activity	Implementing agency	Cost (Rs. Cr)	Source of fund	Whether Project formulated (Yes/ No)	DPC approved	Present status not started/ongoing
1	Provide proper facilities for restricting the seepage of leachate	Kochi Corporation	0.22	Plan fund	Yes	Yes	**Construction of leachate Collection tank completed**
2	Provide proper facilities for collecting and treating leachate	Kochi Corporation	1.27	Plan fund	Yes	Yes	Not started
3	Solid waste treatment facility at Brahmapuram/Waste to Energy plant	Kochi Corporation	300	PPP project	YES	NA	Govt. cancelled the contract with the concessionaire vide G.O (Rt)No. 805/2020/LSGD dated 30/4/2020 KSIDC has floated tender on 24/06/2020 with last date for submission of tenders on 27/08/2020

AUGUST 2020

Sl. No.	Activity	Implementing agency	Time line	Progress in the month of July	Progress in the month of August	% of works completed	Details of works remaining	Remarks/STATUS
1	Restricting seepage of leachate of plastic dumped in the dumping yard	KSIDC, Government of Kerala for Kochi Corporation	July 2021	Work tendered	3 Bids received. Tender Evaluation being done	NA	Work to be awarded.	Government took over the work of bio-mining from Kochi Corporation Vide G.O(Ms) No.8/2020/DMD dated 05/03/2020 assigning KSIDC to tender the work. Work was tendered on 20/03/2020.2 Bids received. None of them found qualified. KSIDC has now re-

								tendered the work on 24/06/2020 with last date for submission of bids on 27/08/2020. 3 Bids were received. Tenders being evaluated and the tender process will be completed by 1st week of October.

Sl. No.	Activity	Implementing agency	Timeline	Progress in the month of July	Progress in the month of August	% of works completed	Present status not started/ongoing
1	Provide proper facilities for restricting the seepage of leachate	Kochi Corporation	APRIL 2020	NA	NA	100	**Construction of leachate Collection tank completed**
2	Provide proper facilities for collecting and treating leachate	Kochi Corporation	March 2021	Health Committee decided to take suggestion from Suchitwa mission regarding technology	Placed in the technical committee of Suchitwa Mission to decide the apt technology	NA	To prepare the DPR agencies were identified and work was awarded. DPR preparation will be resumed once Suchtiwa Mission finalises the technology to be used for leachate treatment plant.
3	Solid waste treatment facility at Brahmapuram/Waste to Energy plant	KSIDC for Kochi Corporation	December 2023	Tender process in progress	Tender process in progress. Last date for	NA	Govt. cancelled the contract with the concessionaire vide G.O (Rt)No.

					submission of bids was 14/09/2020		805/2020/LSGD dated 30/4/2020 KSIDC has floated tender on 24/06/2020 with last date for submission of tenders on 30/07/2020. As requested by the prospective bidders last date of submission of bids was extended till 14/09/2020. Tender procedures will be completed by 15/10/2020.

(THRIKKAKKARA MUNICIPALITY)

- The Secretary, Thrikkakkara Municipality informed that the progress of works mentioned in the action plan is behind the schedule because of the circumstances arised due to Covid-19 Pandemic.

National Mission for Clean Ganga

Format for Submission of Monthly Progress Report by States/UTs
(Hon ble NGT in the matter of OA No.673/2018 dated 06.12.2019)
Periyarriver – Aluva – Eloor-Kalamassery

Sl. No.	Activity to be monitored	Timeline	Submission of progress by state/UT- Compliance status
1	Ensure 100% treatment of sewage at least in-situ remediation	31.03.2020	Progressing
2	Commencement of setting up of STPs and connecting all the drains and other sources of generation of sewage to the STPs must be ensured	Dec 2019- 2021	1. Augmentation and Revamping of existing STP at near Adwaitha Ashramam– Aluva Municipality budgeted the amount in 2019-20 & 2020-21 plan project.DPR got technical approval from Technical Committee on 19.09.2020 and tendering process started. 2. Augmentation and Revamping of existing STP at Aluva Market - An amount of 10 lakhs is included in the 2020-21 annual project. Fisheries department should handover the ETP to municipality so that Municipality can revamp and augment the ETP. (*Reported as per the e-mail from Aluva Municipal Secretary on 14.09.2020*) 3. ETP in Kalamassery market – construction work completed and operation started. *(Reported as per the letter no H 18267/15 dated 22.099.2020 from secretary Kalamssery Municipality.)*
3	Timeline for completing all steps of action plans	31.03.2023	Progressing

	including completion of setting up STPs and their Commissioning		
5	Chief Secretaries may set up appropriate monitoring mechanism at state level • Specifying accountability of nodal authorities not below the Secretary level • Chief Secretaries may have an accountable person attached in their office for this purpose.	-	NA
	• Monitoring at State level must take place	-	NA
6	Progress report may be furnished by the State/UTs to • Secretary,Ministry of Jal Shakti • Member Secretary,CPCB	-	NA

6.1	Progress Report may be comprised of details along with completion timelines on: (I) Identification of polluting sources including drains contributing to river pollution and action as per NGT order on insitu treatment.	2020 2020	(I) i) KadungallurPanchayath <u>Previous status-</u> • inspection conducted by health inspectors, Asha workers, panchayth officials and removed all pipe lines leading to common drain • Biogas plant, compost kit etc issued to house holds for bio degradable wastes. • MCF started in coordination with suchitwa mission. (Monthly progress report of Sept 2020 not submitted) ii). ChoornikkaraPanchayath– Previous status- Only residential apartments and houses located near the riverbank from which no discharge is found. But, there are discharges to drains in other area of panchayath. Strict measures taken against them. Panchayath identified 8 spots for Fixing CCTV camera. 24 lakhs rupees allotted for this project. Work awarded to Steel Industries Kerala Limited. There is no remarkable progress because the panchayat was in Covid – 19 containment zone. *(reported as per the e-mail dated 10.09.2020)* iii). Aluva Municipality Previous status- 1. Constituted Squad for protection of River. Identified hotels, shops etc who are discharging sewage to river and action being taken against the violators. Licence renewed only for the shops/hotels who are provided waste disposal facility. Conducted enquiry in 60 establishments including hotels,

		In progress 2020	flats etc and notices being issued. meeting was conducted with owners of establishments/commercial complexes/flats/houses/hotels etc. and decided that the license will not issue to those were not constructed the Septic tank and soak pit and also The engineering department Will not issue new permit without septic tank and soak pit under KMBR rule. iv). Eloor Municipality Previous status- 1. Routine inspection is going on to ensure that liquid wastes are not disposed into the drains-Eloor municipality.- (Monthly progress report of Sept 2020 not submitted) v). Kalamassery Municipality 1. Conducting survey for identificationofestablishments/commercial complexes/flats/houses/hotels etc who is discharging the sewage to the public drain – Council meeting convened on 13.08.2020 decided to prepare action plan for identifying violators. *(Reported as per the letter no H 18267/15 dated 22.099.2020 from secretary Kalamssery Municipality.)* vi). Kochi Corporation 1. Study for identification of pollution sources at Edappallythodu is reported by Kochi Corporation -Will be undertaken together with the civil work

		3months	2. Periodical inspection in the flats, hotels, shops located along the river is reported by Kochi Corporation- inspection conducted and issued notice to the violators. 3. Fencing the banks of the river to prevent dumping/throwing of wastes into the river - Pending plan fund allocation for the works *(Status report as per letter No.MOE2/15202/19 dated 16.09.2020)*
	II. <u>Status of STPs, I&D and sewerage networks</u> Details of Existing Infrastructure,Gap Analysis, Proposed along with completion timeline	Dec-2019 2021 Dec 2019	(II) 1. Augmentation and Revamping of existing STP at near AdwaithaAshramam .DPR got technical approval from Technical Committee on 19.09.2020 and tendering process started. 2. Augmentation and Revamping of exisiting STP at Aluva Market - Fisheries department should handover the ETP to municipality so that Municipality can revamp and augment the ETP. 3. STP in Kalamaserry market –STP construction completed and started operating *(Reported as per the letter no H 18267/15 dated 22.099.2020 from secretary Kalamssery Municipality.)* (III)No existing CETP. • DIC is to submit a revised proposal from KITCO for installation of CETP and feasibility of laying common pipe line for treated effluents and storm water drainage with the approval of Director of Industries and Commerce. DPR preparation and further steps to be

		2022	initiated. *(As per the letter no DICEKM/1133/2019-A8)*
	III. <u>Status of CETPs</u> Details of Existing CETP and ETP Infrastructure,Gap Analysis, Proposed along with completion timeline, No. of industries and complying status.	Sep 2019	(iv) 1. Construction of retaining wall with HDPE liner at Kalamassery dumping yard in order to prevent the leachate discharge from the yard to ThoombungalThodu–Work progressing. 50% completed *(Reported as per the letter no H 18267/15 dated 22.099.2020 from secretary Kalamssery Municipality.)* • Work started to estimate the remaining waste in the dumping yard by total station and biomining will be initiated .18633.14 tonnes of non biodegradable wastes has been shifted by an agency appointed based on tender. • New scientific incinerator installed and started working.
	(iv) <u>Status of Solid Waste Management & Details of Processing Facilities</u> Details of Existing Infrastructure,Gap Analysis, Proposed along with completion timeline	2021	2. Identification of site is in progress forinstallation of modern abattoirs including poultry and meat rendering plants in Kalamassery municipality—Not yet started, construction will start after identification of land *(Reported as per the letter no H 18267/15 dated 22.099.2020 from secretary Kalamssery Municipality.)* 3. Aluva municipality Previous status- Installation of modern abattoirs in Aluvamuncipality-TS for the project obtained on 17.09.2016 and

			construction of building completed. Approval from Suchitwa mission pending for further action- No progress reported
		March 2021	(v) 1. Daily sampling from 4 location and sample taken from an additional point twice in a month.Monthly river sampling from 12 discharge points from industries.- Sampling ongoing by KSPCB
	(v)Latest water quality ofpolluted river, its tributaries, drains with flow details and ground water quality in the catchment of polluted river;	In progress 2020	(vi) 1. Aluva Municipality Previous status- • Installation of cameras at the waste dumping spots – Aluva municipality formed squad to regularly monitor the issue. Camera installed by various residence associations. Action to be taken by municipality to install additional cameras.- Progress not reported
	(vi)Preventing dumping of waste and scientific waste management including bio-medical waste, plastic waste and decentralizing waste processing, including waste generated from hotels, Ashrams, etc.	Mar-2021	2. Eloor Municipality Previous status- For the installation of camera at various sites, project (356/21) has been made and Rs. 8,00,000 has been earmarked. Contract for installation of camera has given to Keltron and joint inspection by the Keltron and Eloor Municipality has been done to fix the various sites where camera has to be installed. But Keltron has not installed the cameras due to Covid-19 Pandemic restrictions.- (Monthly progress report of Sept 2020 not submitted)

	(vii)Ground water regulation (viii) Adopting good irrigation practices, (ix) Protection and management of food plain Zones (FPZ), (x) Rain water harvesting, (xi)Maintaining minimum Environmental flow of river (xii)Plantation on both sides of the river (xiii) Setting up biodiversity parks on flood plains by removing encroachment	In progress	3. Kalamassery municipality. • Biomedical wastes handed over to image by institutions. • E-waste to clean Kerala Company. • New scientific incinerator installed and started working. • Plastic shredding unit is operating; establishment of second unit is under discussion Operation of one plastic shredding unit started. 4. KadungallurPanchayath - The action being taken for solid waste disposal. – No progress reported in installation of CCTV cameras (Monthly progress report of Sept 2020 not submitted) 5. River monitoring being done by KSPCB. Analysis report submitted. Identification of drains completed by KSPCB. (xi)Shutter operation are periodically done for maintaining minimum flow. *(reported as per email dated 22.09.2020)*

ACTION PLAN FOR RIVER PERIYAR, KERALA

SHORT TERM MEASURES

No. (as per Action Plan)	Activity	Implementing agency	Time line	Progress in the month of July	Progress in the month of August	% works completed	Details of remaining
A(b)	Augmentation and Revamping of existing STP at near Adwaitha Ashramam and to increase the capacity of STP so as to treat more sewage generated in the municipality	Aluva Municipality	Dec 2019	Work started for augmentation but, not completed. The STP was affected by flood on 2018 and 2019. The fund for augmentation received and DPR prepared which is sent to suchitwa mission for sanction. Waiting for TS from Suchitwa Mission.	Municipal Council entrusted the work with Assistant Engineer (Implementing Officer), Aluva Municipality. DPR appraised by technical committee of Suchitwa Mission on 19.08.2020. Committee decided that no technical sanction required for the work. The maintenance work can be done at Municipal level. Directions given to the implementing officer to execute the same within time.		Tendering and execution.
A(b)	Augmentation and Revamping of exisiting STP at Aluva Market and to increase the capacity of STP so as to treat more sewage generated in the municipality	Aluva Municipality	2021	Fisheries department should handover the ETP to municipality so that Municipality can revamp	Following up with fisheries department		

				and augment the ETP. Request given for handover.			
A(b)	Discharge of sewage from township to the River through drain near Periyar Hotel shall be stopped.	Aluva Municipality	2020	. Constituted Squad for protection of River. Identified hotels, shops etc who are discharging sewage to river and action being taken against the violators. Licence renewed only for the shops/hotels who are provided waste disposal facility. Conducted enquiry in 60 establishments including hotels, flats etc and notices being issued. meeting was conducted with owners of establishments/commercial complexes/flats/houses/hotels etc. and decided that the license will not issue to those were not constructed the Septic tank and soak pit and also The engineering department Will not issue new permit without septic tank and soak pit under KMBR rule.	Inspection completed. Squad regularly monitoring the activities. Due to Covid 19 majority of establishments are shut down		
A(b)	Identification of the establishments/commercial complexes/flats/houses/hote ls etc who is discharging the sewage to the public drain and to collect fine based on polluter pay principle	Aluva Municipality, KSPCB	2020			Progressing	

A(a)(iv)	Periodical inspection in the Industries, Flats, hotels monitoring of STP,ETP	KSPCB	Periodical	Progressing			
C(ii)	Installation of modern abattoirs	Aluva Municipality	March 2021	TS for the project obtained on 17.09.2016 and construction of building completed. Approval from Suchitwa mission pending for further action.	Following up with Suchitwa Mission.	80% above	
A(b)	Procurement of sewer cleaning machines and equipment maintenance	Aluva Municipality	March 2020	Cleaning machines purchased and completed cleaning of 110 drains	Completed for FY 2019-20.	100	
E	Installation of cameras at the waste dumping spots	Aluva Municipality	2020	Formed squad to regularly monitor the issue. Camera installed by various residence associations. Action to be taken by municipality to install additional cameras.	At present there is no waste dump sites in Aluva Municipality, which may be verified in the field.		
A(b)	Construction of retaining wall with HDPE liner at Kalamassery dumping yard in order to prevent the leachate discharge from the yard to Thoombungal Thodu	Kalamassery Municipality	Sept 2019	Work under progress	50%		
C(ii)	Installation of plastic shredding unit	Kalamassery Municipality	June 2019	One unit is under operation and installation of one more unit under discussion			

A(a)(iv)	Constitution of squads for night surveillance for finding the unauthorized dumping of sewage at NAD wet lands Kalamassery	Kalamassery Municipality, Police department	2020	wet lands under the purview of NAD and Munciplaity cannot install cameras in the site.			
A(b)	Installation of common STP for Kalamassery Municipality and ETP at Municipal Market	Kalamassery Municipality	Decemb er 2019	Construction completed and started operation	100%		
A(a)(iv)	Monitoring and surveillance of industries in Kalamassery Industrial Estate in order to prevent unauthorized discharges to Muttar River	KSPCB	2019	Periodically conducing inspection	Progressing		
C(ii)	Installation of modern abattoirs including poultry and meat rendering plants.	Kalamassery Municipality, Industries Department (for land allotment)	2021	Kalamassery Municipality - Site not being identified	Site identification progressing		
A(b)	Identification of the establishments/commercial complexes/flats/houses/hote ls etc who is discharging the sewage to the public drain	Kalamassery Municipality	2020	Conducting survey for identification of establishments/commercial complexes/flats/houses/hotels etc who is discharging the sewage to the public drain.	Council meeting convened on 13.08.2020 decided to prepare action plan for identifying violators.		
E	Installation of cameras at the waste dumping spots	Kalamassery Municipality	2020	Installed 9 cameras at different places			
A(b)	Identification of sources of sewage discharged to drain near Pathalam bridge and action to stop the discharge which reach river Periyar from hotels,	Eloor Municipality, KSPCB (for	2020	Notice issued to defaulters and sewage is disposed in to soak pit and septic tank and directed by	One of the Shop in Eloor Municipal Shopping Complex,		

	labour camps etc In case the quantity of sewage generated is assessed to be more STP need to be installed	monitoring)		PCB.Periodic monitoring is done to ensure the same	Pathalamdisposes liquid waste in to the drainage and which had been identified in the earlier inspection. Since the shop is in the Municipal Shopping Complex, municipality constructed two soak pits in order to dispose the liquid waste in to the soak pit itself. Routine inspection is going on to ensure that liquid wastes are not disposed into the drains-Eloor municipality		
E	Installation of cameras at the waste dumping spots	Eloor Municipality	2020	For the installation of camera at various sites, project (356/21) has been made and Rs. 8,00,000 has been earmarked. Contract for installation of camera has given to Keltron and joint inspection by the Keltron and Eloor Municipality has been done to fix the various sites where camera has to be installed.	Keltron has not yet installed the cameras. But they have unloaded poles etc. for the installation after the thorough follow up made with Keltron by this office in this regard.	30%	

				But Keltron has not installed the cameras due to Covid-19 Pandemic restrictions			
A(a)(iv)	Periodical inspection in the Industries, Flats, hotels for monitoring of STP,ETP located in Cochin corporation	KSPCB	periodical	Inspection conducting periodically	Inspection Progressing		
A(a)	Inventory of sources of pollution through a rapid study/Study for identification of pollution sources at Edapally thodu	Kochi Municipal Corporation	3 months	Study for identification of pollution sources at Edappallythodu is reported by Kochi Corporation -Will be undertaken together with the civil work			
E	issuing notice to the defaulters	Kochi Municipal Corporation	4 months	Periodical inspection in the flats, hotels, shops located along the river is reported by Kochi Corporation-inspection conducted and issued notice to the violators.			
A(a)(iv)	Periodical inspection in the flats, hotels, shops located along the river	Kochi Municipal Corporation	periodical	Inspection conducted and issued notice to the violators.			
A(b)	Identification of natural drains/thodu reaching river Periyar and cleaning of weeds, grasses etc	Irrigation department	2 years	Identified some drains and thodu reaching river Periyar.Detailed investigation needed to identify all			

				drains.reported			
C(iii)	Clearing of weeds, grasses at the river bank in order to ensure the smooth flow of water	Irrigation department	3 years	Some work done under SDRF completed. Balancework are progressing.	stimate submitted for financial sanction for following projects. rejuvenation of Periyar-Irrigation Investigation Subdivision Aluva-Desilting of Aaattipuzhathodu in KarumalloorPanchayath for a cost of 20 lakhs 2.Rejuvenation of Periyar river -Irrigation Investigation Subdivision Aluva-Desilting of Muttar river in U/SofManjummal RCB for a cost of 25 lakhs 3.Rejuvenation of Periyar Irrigation Investigation Sub division Aluva -Desilting of Periyar River near Eloor ferry		

					in Varappuzha for a cost of 40 lakhs		
D(a)	Maintaining of Minimum flow in river during lean period and periodical operation of Regulators at River in-order to maintain minimum flow.	Irrigation department	3 years	Shutter operations are periodically done to maintain minimum flow.	Progressing		
A(b)	Common Effluent Treatment Plant at Edayar Industrial Estate	Industries department	2022	Action on the site identification and DPR preparation initiated. Submitted proposal for conducting study and preparation of DPR before the directorate of Industries. Reply form Directorate awaited.	Necessary follow up done		
A(b)	Construction of internal roads and proper drainage in Edayar industrial estate	Industries department		Progressing	90% completed		
A(b)	Installation of common discharge pipe line at downstream of Pathalam Regulator Bridge	Industries department, Irrigation department	3 years	Action has to be initiated by Industries Department	Meeting convened by Industries department on 25.08.2020 with irrigation, PCB and KITCO on DPR preperation. DIC is to submit a revised proposal from KITCO for installation of CETP and feasibility of laying common pipe line for treated effluents and		

					storm water drainage with the approval of Director of Industries and Commerce.		
E	Installation of Night vision surveillance cameras at the River Bank side	KSPCB	2020	6 Ordinary cameras and 3 Night vision Cameras already installed. Proposal given for additional cameras.	Proposal submitted to Head Office		
A(a)(iv)	Periodical Monitoring of Eloor, Edayar, Kalamassery Industrial belts	KSPCB	2020	Periodical inspection and night surveillance being conducted.	Progressing		
A(a)(iv)	Monitoring of quality of water at various intake point	Kerala Water Authority	2020	Monitoring being done by KWA at intake points	progressing		
A(a)(iv)	Installation of additional continuous online River water monitoring station	KSPCB	2022	Station existing at down stream of Pathalam bund. Proposal submitted to install new station at upstream.	Proposal submitted		
A(b)	Identification of the establishments/commercial complexes/flats/houses/hote ls etc who is discharging the sewage to the public drain	Kadungallur Panchayath	2020	Inspection conducted by health inspectors, Asha workers, panchayth officials and removed all pipe lines leading to common drain			
E	Installation of cameras at the waste dumping spots	Kadungallur Panchayath	2020	Not initiated	No progress in installation of CCTV cameras		

A(b)	Identification of the establishments/commercial complexes/flats/houses/hote ls etc who is discharging the sewage to the public drain	Choornikkara Panchayath	2020	Work not started due to COVID19 Pandemic disease	Only residential apartments and houses located near the riverbank from which no discharge is found. But, there are discharges to drains in other area of panchayath. Strict measures taken against them.		
E	Installation of cameras at the waste dumping spots	Choornikkara Panchayath	2020	Work not started due to COVID19 Pandemic disease.	Panchayath identified 8 spots for Fixing CCTV camera. 24 lakhs rupees allotted for this project. Work awarded to Steel Industries Kerala Limited		

LONG TERM MEASURES

No. (as per Action Plan)	Activity	Implementing agency	Time line	Progress in the month of July	Progress in the month of August	% works completed	Details of works remaining

A(b)	Construction of walkway, ring roads etc at the Periyar River bank at industrial belt.	Irrigation department	4 years	Estimate will be submitted soon along with investigation estimate			
C(i)	Fencing of the river banks along the stretches of waste disposal (Edamula stretch)	Cochin Municipal Corporation	1-2 years	Fencing the banks of the river to prevent dumping/throwing of wastes into the river Plan fund 20-21 proposed for the work by Kochi Corporation.			
C(iii)	Beautification of the river stretches (Edamula stretch)	Cochin Municipal Corporation	1-2 years				

ACTION BY GROUND WATER DEPARTMENT

Sl. No.	Ref para item nos as per NGT Order no.673/2018 dated 20.09.2018	Activity	Progress in the month of July	Progress in the month of August	% works completed	Details of works remaining
1	B(i)	Ground Water resources and regulation of ground water extraction by industries particularly in over exploited as critical zones/blocks				
2	B(ii)	Ground water recharging / rain water harvesting				
3	B(iii)	Periodic ground waste quality assessment and remedial actions in case of contaminated ground water tube wells/bore wells or hand pumps				
4	B(iv)	For regulating use of ground water for irrigation purpose, adopting good irrigation practices				

ALUVA MUNICIPALITY

Format for Submission of Monthly Progress Report by States/UTs

(Hon'ble NGT in the matter of OA No.673/2018 dated 06.12.2019)

<table>
<tr><th>Sl. No.</th><th>Activity to be monitored</th><th>Timeline</th><th>Submission of Progress by State/UT-Compliance Status</th></tr>
<tr><td>1</td><td>Ensure 100% treatment of sewage at least in situ remediation</td><td>31.03.2021</td><td>Details of existing STPs/Septage treatment plants in the State :
<table>
<tr><th>Sl. no</th><th>City/ Town</th><th>STP location</th><th>Status</th><th>Directorate by Municipality</th></tr>
<tr><td>1</td><td>Ernakulam</td><td>Aluva Municipality</td><td>Augmenation and Revamping of existing STP at near Adwaitha Ashramam Aluva Municipality</td><td>Aluva Municipality budgeted the amount in 2019-20 & 2020-21 plan project . DPR got technical approval from Technical Committee on 19.09.20 and tendering process started</td></tr>
<tr><td>2</td><td></td><td></td><td>Augmenation and Revamping of existing STP at Aluva Market - Aluva Municipality</td><td>An amount of 10 lakhs is included in the 2020-21 annual project Fisheries department should handover the ETP to municipality so that Municipality can revamp and augument the ETP</td></tr>
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MUNICIPAL OFFICE
ALUVA MUNICIPAL CORP
ALUVA

Secretary
Aluva Muncipality

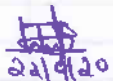
KERALA STATE POLLUTION CONTROL BOARD
ENVIRONMENTAL SURVEILLANCE CENTRE, ELOOR
ANALYSIS REPORT OF RIVER PERIYAR - AUGUST- 2020
Sampling point: MANJUMMAL BUND

Sl.NO	Parameter	Unit	05.08.2020	25.08.2020
1	Temp	°c	29.4	29.9
2	pH		6.6	6.7
3	Conductivity	µs	117	98
4	Turbidity	NTU	4	3
5	Chlorides	mg/l	26	24
6	Hardness	"	24	12
7	D.O.	"	3.5	4.2
8	Calcium	"	5.6	2.8
9	Magnesium	"	2.43	1.215
10	Ammoniacal Ntrogen	"	0.152	0.146
11	Phosphate	"	BDL	BDL
12	Total alkalinity	"	15	15
13	BOD	"	2.7	2.5
14	TC	cfu/100ml	8000	4100
15	FC	"	6200	2800
16	FS	"	NIL	NIL
17	Nitrates	mg/l	0.832	BDL

TREESA SHIMOL P. R.
ASSISTANT SCIENTIST

KERALA STATE POLLUTION CONTROL BOARD
ENVIRONMENTAL SURVEILLANCE CENTRE, ELOOR
ANALYSIS REPORT OF RIVER PERIYAR - AUGUST- 2020
Sampling point: PUTHALAM

Sl. No	Parameter	Unit	05.08.2020	25.08.2020
1	Temp	°c	29.5	30
2	pH		6.6	6.7
3	Conductivity	µS	92	90
4	Turbidity	NTU	3	3
5	Chlorides	mg/l	19	23
6	Hardness	"	15	11
7	D.O.	"	4.3	4.3
8	Calcium	"	3.6	2.4
9	Magnesium	"	1.458	1.215
10	Ammoniacal Ntrogen	"	0.321	0.206
11	Phosphate	"	BDL	BDL
12	Total alkalinity	"	10	10
13	BOD	"	2.4	2.3
14	TC	cfu/100ml	6800	3800
15	FC	"	5000	2200
16	FS	"	NIL	NIL
17	Nitrates	mg/l	1.312	BDL



22/9/20
TREESA SHIMOL P. R.
ASSISTANT SCIENTIST

KERALA STATE POLLUTION CONTROL BOARD
ENVIRONMENTAL SURVEILLANCE CENTRE, ELOOR
ANALYSIS REPORT OF RIVER PERIYAR - AUGUST 2020
Sampling point: VETTUKADAVU

Sl. No	Parameter	Unit	05.08.2020	25.08.2020
1	Temp	°c	29.4	30
2	pH		6.1	6.4
3	Conductivity	µS	142	163
4	Turbidity	NTU	5	3
5	Chlorides	mg/l	29	36
6	Hardness	"	25	29
7	D.O.	"	5.1	4
8	Calcium	"	5.2	6
9	Magnesium	"	2.916	3.402
10	Ammoniacal Ntrogen	"	0.458	0.152
11	Phosphate	"	BDL	BDL
12	Total alkalinity	"	15	15
13	BOD	"	1.8	2.6
14	TC	cfu/100ml	6200	2400
15	FC	"	2200	1100
16	FS	"	Nil	NIL
17	Nitrates	mg/l	1.809	BDL

TREESA SHIMOL P. R.
ASSISTANT SCIENTIST

KERALA STATE POLLUTION CONTROL BOARD
ENVIRONMENTAL SURVEILLANCE CENTRE, ELOOR
ANALYSIS REPORT OF RIVER PERIYAR - AUGUST 2020
Sampling point: PATHALAM

Sl. No	Parameter	Unit	05.08.2020	25.08.2020
1	Temp	°c	29.3	30
2	pH		6.4	6.6
3	Conductivity	µS	64	98
4	Turbidity	NTU	4	2
5	Chlorides	mg/l	12	25
6	Hardness	"	9	13
7	D.O.	"	4.8	4.2
8	Calcium	"	1.6	2.8
9	Magnesium	"	1.215	1.458
10	Ammoniacal Ntrogen	"	0.192	0.219
11	Phosphate	"	BDL	BDL
12	Total alkalinity	"	15	15
13	BOD	"	2	2.4
14	TC	cfu/100ml	4000	3200
15	FC	"	1900	1900
16	FS	"	Nil	NIL
17	Nitrates	mg/l	0.9	BDL

TREES SHIMOL P. R.
ASSISTANT SCIENTIST

Kerala State Pollution Control Board, District Office, Kozhikode

NATIONAL MISSION FOR CLEAN GANGA

Format for submission of monthly progress report by state/UTs

(Hon'ble NGT in the matter of OA.No. 673/2018 dated 6/12/2018)

For the month of August 2020 – Kallai polluted river stretch

Sl No	Activity to be monitored	Timeline	Submission of progress by state/UT-complinance status
1	Ensure 100% treatement of sewage at least in-situ remediation		
2	Commencement of setting up of STPs and other sources of generation of sewage to the STPs must be ensured	28.02.2021	Construction of 2 MLD, 1 MLD STP plant of Calicut medical college started
3	Timeline for completing all steps of action plans including completion of setting up STPs and their commissioning	31.03.2022	Proposal for 13 MLD STP (6 MLD STP plant proposed at Kothi, 7 MLD STP plant proposed at Avikkal) – Tendering in progress
4	Chief secretaries may set up appropriate monitoring mechanism at state level • Specifying accountability of nodal authorities not below the secretary level • Chief secretaries may have an accountable person attached in their office for this purpose		NIL
	• Monitoring at state level must take place	Fortnightly commencing 21.12.2019	NIL

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5	Progress report may be furnished by the state/UTs to • Secretary,ministry of jal shakti • Member secretary,CPCB	Monthly (preferably before 20th of every month)	NIL
5.1	Progress report may be comprised of details along with completion timeline on:		
	(i) identification of polluting source including drains contributing to river pollution and action as per NGT order on insitu treatment .	Action continuing	Drains identified. Pollution load calculated. Action plan prepared. Joint squad of PCB and Corporation inspection in action. Issued notice to 92 units during the period 2019. 30 units installed treatment facilities. During Jan-Mar 2020 joint squad of PCB and corporation inspected 82 units. Issued notice to 56 units. In 16 units installation of treatment units Effluent treatment facilities are under progress.Issued notice to 84 units and a fine of Rs.8000/- was imposed.Monthly progress report submitted by Kozhikode corporation attached as **Annexure 1** DPR submitted to SE,INC,KKD on 16.10.2019for Rs 773.05 lakhs(7.30 crores for desilting of river and 43.05 lakhs for fencing of 5 bridges) under action plan of Kallayi river-Submitted by Irrigation department
	(ii) status of STPs, I&D and sewage networks details of existing infrastructure,proposed along with completion timeline	31.12.2020 31.03.2021	(i)Construction of 2 MLD, 1 MLD STP plant of Calicut medical college started. (ii)Proposal for 13 MLD STP (6 MLD STP plant proposed at Kothi, 7 MLD STP plant proposed at Avikkal) –

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			Tendering in progress. (iii)STP of 13 MLD proposed at Kotooli.About 12% of sewer lines were laid by KWA – Honble NGT stayed the project (OA no. 215/2016). (iv)Individual septic tank and soak pit system provided for house hold, units like bakery, cool bars small restaurants with less seating capacity. Individual STPs for high rise building, hotels, Restaurants, Commercial buildings.
	(iii) status of CETPs details of existing CETP and ETP infrastructure ,Gap analysis,proposed along with complying status	No specific proposal	No CETP proposed
	(iv) status of solid waste management & details of processing facilities details of existing infrastructure, Gap analysis,proposed along with completion timeline	Functioning 30/06/2021 Functioning Functioning	(i)Existing centralized waste disposal facility of 100 MT/DAY at Njeliyanparamba(windrow composting) (ii)Proposal of 450 TPD waste to energy plant at Njeliyanparamba implementation in progress. Caping work started. (iii) Chicken waste rendering plant of 40TPD functioning in Thamarassery – 170 chicken stalls of Kozhikode corporation are disposing off the waste through this rendering plant. (iv) 3 MRF facilities existing (At Njeliyamparamba(Super MRF) 3TPD-with plastic shredding unit, west hill industrial estate -2TPD --with plastic shredding unit,Near Jayanthi nagar

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			colony)
		Functioning	(v) 24 units of aerobic compost facilities existing (Tagore hall, S K Pottakkad hall, Jubilee hall, Mofusil bus stand,T.B. Clinic,Circle office).
		Functioning	(vi)350 ring compost and 150 Biogas plants installed in house holds.
		Functioning	(vii) Community level biogas plant-3nos(Mental Hospital 1TPD, ITI Malikadav -1TPD, Juvine home- 1TPD) (viii) 3 Biogas plants in market (Central market 2TPD, Vegitable market 2TPD, New bus stand,2TPD)
		30/03/2021	(ix)Treatment facility for waste in Central Market – Tendering in Progress
		31/12/2022	(x) Establishment of slaughter house-DPR submitted.
	(v) latest water quality of polluted river, its tributaries, drains with flow details and ground water quality in the catchment of polluted river;		Analysis report of Kallayi river stretch for the month of August 2020 Attached as **Annexure 2**
	(vi) preventing dumping of waste and scientific waste management including bio-medical waste plastic waste and decentralizeing waste processing, including waste generated from hotels, ashrams,etc.		Same as Item no. 5.1(v) Fine of 32 Lakhs imposed for illegal dumpinh og solid wastes into rivers and public places.Instalation of CCTV. Biomedical waste from Hospital,labs ,clinics collected through image, plastic waste disposal through recyclers. Individual solid waste processing facilities like bio gas plant, bio bins in high rise building, hotels, restaurants etc.

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		Fencing proposed by irrigation department.
(vii) ground water regulation		NIL
(viii) adopting good irrigation practices		NIL
(ix) protection and management of flood plain zones(FPZ),		Initiated
(x) Rain water harvesting		Desiltation of Kallayi River – Action plan of Irrigation dept.
(xi) Maintaining minimum environmental flow of river		Initiated
(xii)Plantation on both sides of the river		NIL
(xiii) Setting up biodiversity parks on flood plains by removing encroachment		

(Hon'ble NGT in the matter of OA No.673/2018 dated 06.12.2019)

KERALA STATE POLLUTION CONTROL BOARD
DISTRICT OFFICE
KOZHIKODE

SHABNA KUSHE SHEKHAR
Environmental Engineer

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ACTION PLAN FOR RIVER KALLAYI, KERALA

Kozhikode Corporation

No.	Activity	Implementing agency	Time line	Progress in the month of July 2020	Progress in the month of August 2020	% works completed	Details of works remaining
1	Identification of illegal outlets into storm water drain and issue Notice to such units	Kozhikode Corporation	30.12.2020	100 notice Issued. Fined 29000.	58 notice Issued. Rs.8000 fined.	ongoing Work.	
2	Waste to energy project proposed at Njeliyamparamba	KSIDC	30.06.2021	Caping work Started.	10% work Completed.	10% work Completed.	
3	Establishment of Aerobic compost units 24 units established in 6 sites	Kozhikode Corporation	Completed and functioning	work Completed. —	—	100% Completed.	
4	Segregation of solid waste at source level and treatment of house hold wastes 300 ring compost and 150 biogas plant installed	Kozhikode Corporation	30.06.2019	11		100% Completed.	
5	Setting up of rendering treatment plant for chicken stall wastes Installed in Thamarassery panchayath. Now waste is collected from 170 units	Fresh cut agency	on trial run	100 % chicken waste Collected	100% chicken waste Collected	100% chicken waste Collected.	
6	Implementation of Green protocol unit	Kozhikode Corporation	30.06.19	Completed.		Completed.	

BABU.E
Health Inspector

7	Setting up of common STP of(13 MLD) 7.1 At Kothi bridge- 6 MLD plant proposed 7.2 At Avikkal -7 MLD plant proposed	Kozhikode Corporation	31.03.2020	~~tendering proceed~~ On going	tendering procedures on going		
8	Cleaning of Canoli canal	Kozhikode Corporation	20.07.2019	—	—		KWL work ongoing
9	Purchasing of Solar Boat for Canoli canal cleaning	Kozhikode Corporation	31.03.2020	N/A	N/A	Project dropped.	
10	Installation of CCTV Camera for the Identification and monitoring of illegal activities	Kozhikode Corporation	31.03.2020	N/A	N/A	Project dropped.	
11	Establishment of Mobile Septage Units	Kozhikode Corporation	31.03.2020	N/A	N/A.	Waiting for PCB approval.	
12	Action taken against dumping of wastes into river and public places	Kozhikode Corporation	Continuing	100 notice issued. Fined Rs: 25000.	90 notice issued 50000 Final	on going work.	
13	Cleaning of B.K canal	Kozhikode Corporation	31.03.2020	on going work.	on going work.	90% Completed.	10% work. Remaining
14	Establishment of treatment plant at Medical college (3 MLD plant) Tender over 14.1 -2 MLD plant proposed 14.2- 1 MLD plant proposed	Kozhikode Corporation	31.03.2020	work started.	10% work completed.	10% work Completed	90% Work Remaining finished on 31.12.2021
15	Construction of drains at Y.M.RC Ayyankar colony	Kozhikode Corporation	31.03.2020	40% work completed.	90% Work Completed.	90% work Completed	50% work Balance finished on 31.3.202

BABU.N
Health Inspector

ACTION PLAN FOR RIVER KALLAYI, KERALA

Kozhikode Corporation							
No.	Activity	Implementing agency	Time line	Progress in the month of July 2020	Progress in the month of August 2020	% works completed	Details of works remaining
1	Identification of illegal outlets into storm water drain and issue Notice to such units	Kozhikode Corporation	30.12.2020				
2	Waste to energy project proposed at Njeliyamparamba	KSIDC	30.06.2021				
3	Establishment of Aerobic compost units 24 units established in 6 sites	Kozhikode Corporation	Completed and functioning				
4	Segregation of solid waste at	K	30.06.2019				

	source level and treatment of house hold wastes 300 ring compost and 150 biogas plant installed	ozhikode Corporation					
5	Setting up of rendering treatment plant for chicken stall wastes Installed in Thamarassery panchayath. Now waste is collected from 170 units	Fresh cut agency	on trial run				
6	Implementation of Green protocol unit	Kozhikode Corporation	30.06.19				
7	Setting up of common STP of(13 MLD) 7.1 At Kothi bridge- 6 MLD plant proposed 7.2 At Avikkal -7 MLD plant proposed	Kozhikode Corporation	31.03.2020	23rd SHPSC chaired by Hon: chief secretary has directed to negotiate with the contractor. And submit the details in next SHPSC.	Negotiated with the contractor and a report in this regard was prepared and submitted to principle secretary LSGD and MD AMRUT	O%	NIL
8	Cleaning of Canoli canal	Kozhikode	20.07.2019				

		Corporation					
9	Purchasing of Solar Boat for Canoli canal cleaning	Kozhikode Corporation	31.03.2020				
10	Installation of CCTV Camera for the Identification and monitoring of illegal activities	Kozhikode Corporation	31.03.2020				
11	Establishment of Mobile Septage Units	Kozhikode Corporation	31.03.2020				
12	Action taken against dumping of wastes into river and public places	Kozhikode Corporation	Continuing				

13	Cleaning of B.K canal	Kozhikode Corporation	31.03.2020	Retaining wall of length 100m has been constructed. Slit removed for 50m.	Retaining wall of length 50m has been constructed. Slit removed for 50m	95%	Cleaning of tributaries 900m. Fixing of fencing
14	Establishment of treatment plant at Medical college (3 MLD plant) Tender over 14.1 -2 MLD plant proposed 14.2- 1 MLD plant proposed	Kozhikode Corporation	31.03.2020	Contractor had submitted design detail in the technical committee, committee had suggested some correction. The proposed route has some slight changes due to reduce road cutting issues.	A joint site visit has been conducted. Contractor agreed to submit the final design details by 30.09.2020.	0	Nil
15	Construction of drains at Y.M.RC Ayyankar colony	Kozhikode Corporation	31.03.2020	60 m Storm water drainage has been constructed.	Work has been stopped due to containment zone.	44%	525m Storm water drainage construction is pending.
16	Implementation of STP at Kottooli (13.5 MLD)	Kozhikode Corporation					
17	Treatment facility for waste water in Central market	Kozhikode Corp					

		oration					
18	Establishment of comfort stations	Kozhikode Corporation					
19	Provide facility for MRF,RRF, Super MRF 3 units existing 19.1 Njeliyanparamb 19.2 Industrial estate 19.3 Meyor bhavanjayanthinagar colony	Suchitwa Mission	Project in progress				
20	Identification of illegal outlets from house to storm water drain and issue Notice to such Houses	Kozhikode Corporation					
21	Establishment of Plastic shredding unit	Kozhikode Corporation	Project started				
22	Establishment of slaughtering unit	Kozhikode					

		Corporation					
23	Cleaning of drains in Kozhikode Town	Kozhikode Corporation	Ongoing				

Irrigation Department

No. (as per Action Plan)	Activity	Implementing agency	Time line	Progress in the month of July 2020	Progress in the month of August 2020	% works completed	Details of works remaining
1	Desilting of Kallayi river from Kaduppini to Kothi in Kozhikode Corporation	Irrigation department	31.03.21	DPR submitted to SE,INC,KKD on 16.10.2019 for Rs 773.05 lakhs(7.30 crores for desilting of river and 43.05 lakhs for fencing of 5 bridges) under action plan of Kallayi river			
2	Provide fencing on the sides of the Bridge	Irrigation department	31.03.21				
3	Dredging, Desilting & removal of weeds from E K Canal (11.2 km)	Irrigation department	31.07.19	Work entrusted to Kerala Waterways & Infrastructure Ltd(KWIL)			
4	Bio Park in Kozhikode District	Irrigation department		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	Irrigation department		Action to be taken by the Hydrology Wing of Irrigation Department as this needs data collection, scientific analysis and modeling skills.			

Suchitwa Mission

No. (as per Action Plan)	Activity	Implementing agency	Time line	Progress in the month of July 2020	Progress in the month of August 2020	% works completed	Details of works remaining
1	Board displaying messages against dumping to be placed in river banks	Suchitwa Mission	15.07.19		Estimate prepared		

ACTION PLAN BY IRRIGATION DEPARTMENT

No. (as per Action Plan)	Activity	Implementing agency	Time line	Progress in the month of July 2020	Progress in the month of August 2020	% works completed	Details of works remaining
E	Dredging and desilting	Irrigation Dept	3 years	DPR submitted to SE,INC,KKD on 16.10.2019 for Rs 7.30 crores for desilting of river from Kaduppini to Kothi under action plan of Kallayi river			
E	E-flow (by micro water shed management)	Irrigation Dept	3 years	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)	Irrigation Dept	3 years	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)	Irrigation Dept	3 years				

Action Plan by Ground Water Department

No. (as per Action Plan)	Activity	Implementing agency	Time line	Progress in the month of July 2020	Progress in the month of August 2020	% works completed	Details of works remaining
B(i)	Ground Water resources and regulation of ground water extraction by industries particularly in over expolited as critical zones/blocks (Earlier status: As per Groundwater resources of Kerala, 2017 estimate ,Kozhikkode Block comes under the Kallai river basin and the block is safe with stage of groundwater extraction 68.49%)	Ground Water Department	Nil	Nil	Nil	Nil	Nil
B(ii)	Ground water recharging / rain water harvesting (Earlier status : The average pre-monsoon groundwater level is 7.23mbgl. Groundwater Department has implemented 3 no of dug well recharge schemes at Kozhikkode block)	Ground Water Department	Nil	Nil	Nil	Nil	Nil
B(iii)	Periodic ground waste quality assessment and remedial actions in case of contaminated ground water tube wells/bore wells or hand	Ground Water Department	Nil	Nil	Nil	Nil	Nil

	pumps (Earlier status - Groundwater Department has 1 observation piezometer (BW)in the river stretch.)						
B(iv)	For regulating use of ground water for irrigation purpose, adopting good irrigation practices (Earlier status - The total irrigation draft in the block area is 488.76 ha.m.)	Ground Water Department	Nil	Nil	Nil	Nil	Nil

Action plan by irrigation Department

No. (as per Action Plan)	Activity	Implementing agency	Time line	Progress in the month of July 2020	Progress in the month of August 2020	% works completed	Details of works remaining
E	Dredging and desilting	Irrigation Dept	3 years				
E	E-flow (by micro water shed management)	Irrigation Dept	3 years				

KERALA STATE POLLUTION CONTROL BOARD
കേരള സംസ്ഥാന മലിനീകരണ നിയന്ത്രണ ബോർഡ്
കോഴിക്കോട് റീജ്യണൽ ലബോറട്ടറി
REGIONAL LABORATORY, KOZHIKODE
3rd FLOOR, ZAMORIN'S SQUARE, LINK ROAD, KOZHIKODE – 673 002
Telefax: 2300745, 46, 47
www.keralapcb.org

ANALYSIS REPORT OF RIVER WATER

Report No.	**K R O R 3 8 7 6 / 1 to 5**	**Date:**	**0 4 0 9 2 0 2 0**
Date of Sample Collection	1 8 0 8 2 0 2 0	Date of receipt of the sample	1 8 0 8 2 0 2 0
		Time	Hours: 0 1 : 3 0 PM
Sampled by:	DO ,KKD	Sample ID	KL1, KL2, KL3, KL5 & KL7
Sampling Method	APHA1060B,a	Sample Lab Code	KROS 3876/1-5
Sample container	PC 2.5 L	Ref.letter No.	PCB/KKD/DO//POLLUTED RIVER STRETCHES/2018 dated18.08.2020
Source:	KALLAI RIVER WATER	Received from:	EE,DO,KKD
		Period of analysis:	18.08.2020-04.09.2020
Specific sampling location:	GIVEN BELOW	No. of samples	5
		Analysed by:	CVR/JTP/DKJ
Sample preservation:	Ice box	Method:Standard Methods for the examination of Water and Wastewater, APHA AWWA WEF (22nd Ed.)	

sl no	Parameters	unit	Method No.	SAMPLE ID KL 1	KL 2	KL 3	KL 5	KL 7	
1	pH	-	APHA 4500-H+,B	6.7	6.7	6.7	7.1	7.1	
2	CONDUCTIVITY	µmhos /cm	APHA 2510B	362.2	456	466	9640	687	
3	BOD	mg/L	IS3025 (Part 44)	3.2	0.13	1.2	2.13	0.27	
4	DISSOLVED OXYGEN	mg/L	APHA 4500-O,C	4.47	3.4	3.53	6.13	5.33	
5	TOTAL COLIFORM,	CFU/100ml	APHA 9222B	62000	64000	63000	70000	87000	
6	FECAL COLIFORM	CFU/100ml	APHA 9222D	35000	45000	34000	48000	56000	
7	TEMPERATURE	°C	APHA 2550B	28	27	27	27	25	

Test method variation: None

Remarks: LDL-Lower Detection Limit BDL-Below Detection Limit

KL1-KALLAI RIVER AT PALATHUMKANDI BRIDGE,POKKUNNU,KL2-KALLAI RIVER AT KADUPPINI BRIDGE, K.L3- KALLAI RIVER AT MANKAVU BRIDGE, KL5- KALLAI RIVER AT KALLAI BRIDGE & KL7-KALLAI RIVER AT UDAYA RESIDENCY .

Office of The Environmental Engineer CALICUT Date: 04/09/2020 Kerala State Pollution Control Board

Scientist in charge 4/9/2020
Asst. Scientist

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Kerala State Pollution Control Board, District Office, Kozhikode

NATIONAL MISSION FOR CLEAN GANGA

Format for submission of monthly progress report by state/UTs

(Hon'ble NGT in the matter of OA.No. 673/2018 dated 6/12/2018)

For the month of August 2020 – Kuttiady polluted river stretch

Sl No	Activity to be monitored	Timeline	Submission of progress by state/UT-complinace status
1	Ensure 100% treatement of sewage at least in-situ remediation		
2	Commencement of setting up of STPs and other sources of generation of sewage to the STPs must be ensured		Nil
3	Timeline for completing all steps of action plans including completion of setting up STPs and their commissioning		Nil
4	Chief secretaries may set up appropriate monitoring mechanism at state level • Specifying accountability of nodal authorities not below the secretary level • Chief secretaries may have an accountable person attached in their office for this purpose		Nil
	• Monitoring at state level must take place		Nil

5	Progress report may be furnished by the state/UTs to • Secretary,ministry of jal shakti • Member secretary,CPCB	Monthly (preferably before 20th of every month)	Nil
5.1	Progress report may be comprised of details along with completion timeline on: (i) identification of polluting source including drains contributing to river pollution and action as per NGT order on insitu treatment	Primary STP (Oil and Grease trap with grit chamber) Will be implemented by 31/3/2021	Drains identified. Pollution load calculated. Action plan prepared. Notices issued by concerned Panchayath Secretaries to individual units. Action under progress by individual units. Monthly progress report of Kuttiady, Maruthomkara, Cheruvannur, Changaroth,Perambra, Kavilumpara, Velom Panchayaths, Irrigation department, Water Authority, Shuchitwa mission for the month of August 2020 is attached as **Annexure 1.**
	(ii) status of STPs, I&D and sewage networks details of existing infrastructure,proposed along with completion timeline		Mostly rural area. No common STP proposed. Individual septic tank and soak pit system provided for house hold, units like bakery, cool bars small restaurants with less seating capacity. Individual STPs for high rise building, hotels, Restaurants, Commercial buildings.

	(iii) status of CETPs details of existing CETP and ETP infrastructure ,Gap analysis,proposed along with complying status	---	No CETPs proposed
	(iv) status of solid waste management & details of processing facilities details of existing infrastructure, Gap analysis,proposed along with completion timeline	31/03/2021 Completed and functioning Completed and functioning Completed and functioning Completed and functioning 31/103/2021 31/10/2020 31/03/2021	**<u>Kuttiyadi Panchayth</u>** Construction started for block level MRF for 7 panchayath in the Kuttiyady block. MCF of Kuttiyadi Panchayath set up with shredding unit- work completed and functioning. Mini MCF set up in all wards of Kuttiyadi panchayath. **<u>Kavilumpara panchayath</u>** 3 MCFs are functioning. **<u>Maruthomkara Panchayath</u>** MRF completed and functioning. Biogas plant work completed. **<u>Velom Panchayath</u>** – Community level – Biogas plant.Work under construction(80% work completed). 50 nos of Biogas plant for house hold- Completed and functioning **<u>Perambra Panchayath</u>** MCF- Tendering in progress Mini MCF – work completed. **<u>Changaroth Panchayath</u>** Project for setting up MCF approved. Site to be identified soon. Biogas plant and Ring compost for house hold proposed. Plastic shredding unit proposed.

	(v) latest water quality of polluted river, its tributaries, drains with flow details and ground water quality in the catchment of polluted river;		Water quality monitoring result for the month of August 2020 is attached as **Annexure-2**
	(vi) preventing dumping of waste and scientific waste management including bio-medical waste plastic waste and decentralizeing waste processing, including waste generated from hotels, ashrams,etc.		Same as Item no. 5.1(v) Biomedical waste from Hospital,labs ,clinics collected through image, plastic waste disposal through recyclers.Individual solid waste processing facilities like bio gas plant, bio bins in high rise building, hotels etc. Fencing proposed by irrigation department.
	(vii) ground water regulation		NIL
	(viii) adopting good irrigation practices		NIL
	(ix) protection and management of flood plain zones(FPZ),		
	(x) Rain water harvesting	Work in progress 31/03/2021	**<u>Velom panchayath</u>** 22527 rain water pit , well recharge – 1500 houses **<u>Kavilumpara panchayath</u>** well recharge – 160 houses

			<u>Maruhtonkara panchayath</u> Well recharge- Action plan and TS approved **<u>Cheruvanoor panchayath</u>** Well Recharge – Project in progress
	(xi) Maintaining minimum environmental flow of river		**<u>Kavilumpara panchayath</u>** Adopted steps to remove sands and rock dumped durig rain flood **<u>Maruthonkara panchayah</u>** 74 works ongoing under MGNREGS(RWH, soil conservation). **<u>Kavilumpara panchayath</u>** 5 works ongoing under MGNREGS for protection of river sides
	(xii) Plantation on both sides of the river		
	(xiii) Setting up biodiversity parks on flood plains by removing encroachment		

(Hon'ble NGT in the matter of OA No.673/2018 dated 06.12.2019)

National Mission for Clean Ganga

Format for Submission of Monthly Progress Report by States/UTs
(Hon'ble NGT in the matter of OA No.673/2018 dated 06.12.2019)
RIVER BHARATHAPUZHA, PALAKKAD – AUGUST 2020

S. No	Activity to be monitored	Timeline	Submission of progress by State/UT- Compliance status
1	Ensure 100% treatment of sewage at least in-situ remediation	March 2021	Due to Covid 19 restrictions project progress pending
	Commencement of setting up of STPs and connecting all the drains and other sources of generation of sewage to the STPs must be ensured	Not proposed	Not Applicable
2	Timeline for completing all steps of action plans including completion of setting up STPs and their Commissioning	March 2021 (Primary STP and Septage Treatment Plant proposed, not STP)	Due to Covid 19 restrictions project progress pending
5	Chief Secretaries may set up appropriate monitoring mechanism at state level • Specifying accountability of nodal authorities not below the Secretary level • Chief Secretaries may have an accountable person attached in their office for this purpose	Applicable at State level	Not Applicable
	• Monitoring at State level must take place	Applicable at State level	Not Applicable
6	Progress report may be furnished by the State/UTs to • Secretary, Ministry of Jal Shakti • Member Secretary, CPCB	Applicable at State level	Not Applicable

6.1	Progress Report may be comprised of details along with completion timelines on: (I) Identification of polluting sources including drains contributing to river pollution and action as per NGT order on in-situ treatment.	Primary STP (oil and grease trap with grit chamber)- March 2021	Due to Covid 19 restrictions project progress pending
	(II) <u>Status of STPs, I&D and sewerage networks</u> Details of Existing Infrastructure, Gap Analysis, Proposed along with completion timeline	Not Proposed	Not Applicable
	(III) <u>Status of CETPs</u> Details of Existing CETP and ETP Infrastructure, Gap Analysis, Proposed along with completion timeline, No. of industries and complying status	Not proposed	Not Applicable
	(iv)<u>Status of Solid Waste Management & Details of Processing Facilities</u> Details of Existing Infrastructure, Gap Analysis, Proposed along with completion timeline	MSW treatment Plant – March 2021	Work in progress and 75% of work was completed
	(v) Latest water quality of polluted river, its tributaries, drains with flow details and ground water quality in the catchment of polluted river;	March 2021	Water quality monitoring of polluted river stretch, two additional points completed until August 2020.
	(vi)Preventing dumping of waste and scientific waste management including bio-medical waste, plastic waste and decentralizing waste processing, including waste generated from hotels, Ashrams, etc.	Implemented by January 2020	Management of dry wastes were achieved through the MCF and RCF facilities, BMW by CBWTDF, E-Waste by authorised collection agencies.

	(vii)Ground water regulation	No specific proposal	Not Applicable
	(viii) Adopting good irrigation practices	No specific proposal	Not Applicable
	(ix) Protection and management of food plain Zones (FPZ)	March 2021	Project preparation on-going (possibility study for the construction of protection structures in the flood plain zone of Bharathapuzha at Pattambi was started).
	(x) Rain water harvesting	No specific proposal	Not Applicable
	(xi)Maintaining minimum Environmental flow of river	March 2021	Project preparation on-going (a study to assess the E flow of the river Bharathapuzha at Pattambi will be started soon)
	(xii) Plantation on both sides of the river	No specific proposal	Not applicable
	(xiii)Setting up biodiversity parks on flood plains by removing encroachment	No specific proposal	Not applicable

ACTION PLAN FOR RIVER BHARATHAPUZHA, KERALA

No. (as per Action Plan)	Activity	Implementing agency	Time line	Progress in the month of July	Progress in the month of August	% works completed	Details of works remaining
1	Establishment and Modernisation of MSW treatment Plant (Solid Waste Management)	Pattambi Municipality	March 2021	Construction work for the MSW treatment plant was started on 25/05/2020 and work on progress.	Work on progress	75% Work completed	25% implementation remaining
2	Material collection Facility (Solid Waste Management)	Pattambi Municipality	Implemented by January 2020	Implemented	Implemented	100% implemented	Nil
3	Resource recovery facility (Solid Waste Management)	Pattambi Municipality	Implemented by January 2020	Implemented	Implemented	100% implemented	Nil
4	Installing house hold and community level solid waste management units	Pattambi Municipality	March 2021	A total of 570 Compostable Pits were installed. Wet waste processing unit for 2500 households and 50 community establishments	Project will complete in 2020-21	50% implemented	25% implementation remaining

				will be started soon			
5	Door to Door Collection and Transportation of MSW	Pattambi Municipality	December 2020	Currently Door to door collection of MSW covered 4 wards and its coverage will be extended for whole 28 wards before December 2020	Started across 23 Wards	82% of work completed	Implementation of 18% (4wards) remaining
6	Regulating activities in flood plain zone protection and management of flood plain zone including side bank protection and greenery development	Irrigation department	March 2021	Directed to EE, MI Division Palakkad for constitute a technical committee to study and submit the preliminary report within 2 months	possibility study for the construction of protection structures in the flood plain zone of Bharathapuzha at Pattambi was started by MI Division Palakkad	Implementation not started	Full implementation remaining
7	Issues relating to E-flow, maintaining minimum environmental flow of river(by having watershed management provisions) including removal of light jungles and muddies from river courses	Irrigation department	March 2021	Matter has been communicated to CE-I&A, to constitute a river basin study	A study to assess the E flow of Bharathapuzha at Pattambi will be started soon	Implementation not started	Full implementation remaining

8	Management of Municipal plastics, hazardous, biomedical and electrical and electronic wastes	Panchayath Municipality	Implemented by January 2020	Management of dry wastes were achieved through the MCF and RCF facilities	Dry Waste Collection (HKS) Bio Medical Waste is carrying by IMA E Waste collection is scheduled in every one	100% Implemented	Nil
9	Awareness programmes for sections of public	KSPCB	March 2021	KSPCB organised a one day workshop for Rejuvenation of water resources on 22nd February 2020. Action point implemented	Not applicable	100% Implemented	Nil
10	Monitoring of river water quality by sampling	KSPCB	2020-2021	Water quality monitoring in Bharathapuzha at Pattambi and two additional points were completed during the period of July 2020	Water quality monitoring in Bharathapuzha at Pattambi and two additional points were completed until August 2020	Continued up to March 2021	Continued up to March 2021

11	Primary Sewage Treatment Plant and Septage Treatment plant	Pattambi Municipality	March 2021	Implementation of primary treatment techniques (screening and oil & grease trap with grit chamber) at the dead end of the polluted drains will be adopted as an alternative for a centralised STP	Proposal Submitted before governing council	Work not started	Full implementation remaining
12	Installation of Modern Slaughter House and Rendering Plant	Pattambi Municipality	March 2021	Planned to implement a modern slaughter house with the fund of KIFB at Sangaramangalam	Work not tendered	Work not started	Full implementation remaining
13	Construction of Sanitary Complex in Public Place	Pattambi Municipality	March 2021	Commencement of 5 community toilets and a Sanitary complex is in the initial stage	Tendered but work not awarded	Work not started	Full implementation remaining

14	Green Protocol implementation in all offices institution & public function	Pattambi Municipality	March 2021	Partly achieved and will be continued up to March 2021	Implented	100% Implemented	Nil

POLLUTED RIVER STRETCH MONITORING PROGRAMME
DATA SHEET AUGUST 2020

Nhangatiri Temple (U/S of NWMP-2)

Station Name	RIVER BHARATHAPUZHA AT PATTAMBI (NWMP-2)										
Type of Water body	RIVER										
Completed by	DO, PALAKKAD										
Agency	Kerala State Pollution Control Board										
1	Station Code	2	3	3	2						
2	Date and time of sample taken (DD/MM/YY, HH/MM)	04.08.2020									
		1	1	:	1	0					
3	Weather	Cloudy			Clear			Windy		Raining √	
4	Approximate depth of main stream	< 50 cm			50 – 100 cm			>100 cm		Flood √	
5	Color & Intensity	Clear			Turbid √			Green		Brown	
		1 = Light			2 = Moderate √			3 = High			
6	Odour	None √			Fishy			H_2S		Other	
7	Floating Matter	Floating Algae			Floating sludge			Oil & Grease		Water Hyacinth	
8	Visible effluent discharges in proximity	Industrial			Municipal sewage			None √			
9	Human activities around the station	Cattle wading			Tourism spot			Fishing	Bathing √	Other	
10	Location details	U/s of town or industrial area √			D/s of town or industrial area			Pilgrim center/Bathing Ghat/Water intake		None	
11	Flow rate	190 m^3/s									
12	Major polluting source	Industrial effluent			MSW		PW	None √		Other	
13	Uses of water in downstream	Irrigation			Drinking water source √			Fishing		Domestic	
		Organized water source			Cultivation			Bathing Ghat		Others	

Sl.No	Determinant	Value
1	Temperature, ^0C	24
2	pH	7.1
3	Conductivity, µmhos/cm	128
4	Turbidity, NTU	8
5	Phenolphthalein Alkalinity, as $CaCO_3$ mg/l	BDL
6	Total Alkalinity, as $CaCO_3$ mg/l	28
7	Chloride, mg/l	17.82
8	COD, mg/l	4
9	TKN, mg/l	0.003
10	Ammoniacal-N, mg/l	BDL
11	Hardness, as $CaCO_3$ mg/l	42
12	Calcium, as $CaCO_3$ mg/l	24
13	Magnesium as $CaCO_3$, mg/l	18
14	Sulphate, mg/l	3.4
15	Sodium, mg/l	9.2
16	Total Dissolved Solids, mg/l	73
17	Total Fixed Solids, mg/l	50
18	Total Suspended Solids, mg/l	7.1
19	Phosphate, mg/l	BDL
20	Boron, mg/l	BDL
21	Potassium, mg/l	0.9
22	BOD, mg/l	1.5
23	Fluoride, mg/l	0.361
24	Dissolved Oxygen, mg/l	6.9
25	Nitrate-N, mg/l	1.83
26	Total Coliform, MPN/100 ml	80
27	Fecal Coliform, MPN/100 ml	30
28	Fecal Streptococci MPN/100 ml	10
29	SAR	4.7

POLLUTED RIVER STRETCH MONITORING PROGRAMME
DATA SHEET AUGUST 2020

Veliamkallu regulator (D/S of NWMP-2)

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National Mission for Clean Ganga

Format for Submission of Monthly Progress Report by States/UTs

(Hon'ble NGT in the matter of OA No.673/2018 dated 06.12.2019)

RIVER BHAVANI, PALAKKAD- AUGUST 2020

S. No.	Activity to be monitored	Timeline	Submission of progress by State/UT- Compliance status
1	Ensure 100% treatment of sewage at least in-situ remediation	March 2020. Target achieved	Action plan completed. Septic tank systems are adopted for entire sewage treatment
	Commencement of setting up of STPs and connecting all the drains and other sources of generation of sewage to the STPs must be ensured	Not proposed	Not Applicable
2	Timeline for completing all steps of action plans including completion of setting up STPs and their Commissioning	STP not Proposed	Septic tank systems are adopted for entire sewage treatment
5	Chief Secretaries may set up appropriate monitoring mechanism at state level • Specifying accountability of nodal authorities not below the Secretary level • Chief Secretaries may have an accountable person attached in their office for this purpose	Applicable at State level	Not Applicable
	• Monitoring at State level must take place	Applicable at State level	Not Applicable
6	Progress report may be furnished by the State/UTs to • Secretary, Ministry of Jal Shakti • Member Secretary, CPCB	Applicable at State level	Not Applicable

6.1	Progress Report may be comprised of details along with completion timelines on:		
	(I) Identification of polluting sources including drains contributing to river pollution and action as per NGT order on in-situ treatment.	Drains contributing pollution to the River were not identified	Not Applicable
	(II) <u>Status of STPs, I&D and sewerage networks</u> Details of Existing Infrastructure, Gap Analysis, Proposed along with completion timeline	Not Proposed	Not Applicable
	(III) <u>Status of CETPs</u> Details of Existing CETP and ETP Infrastructure, Gap Analysis, Proposed along with completion timeline, No. of industries and complying status	Not proposed	Not Applicable
	(iv)<u>Status of Solid Waste Management & Details of Processing Facilities</u> Details of Existing Infrastructure, Gap Analysis, Proposed along with completion timeline	Dec 2020	Dry waste- Material Collection Facility 80% completed Wet waste- 100% Managed at source level
	(v) Latest water quality of polluted river, its tributaries, drains with flow details and ground water quality in the catchment of polluted river;	March 2021	Water quality monitoring of polluted river stretch and three additional points were completed up to august 2020

	(vi)Preventing dumping of waste and scientific waste management including bio-medical waste, plastic waste and decentralizing waste processing, including waste generated from hotels, Ashrams, etc.	Implemented by January 2020	Not applicable
	(vii)Ground water regulation	No specific proposal	Not applicable
	(viii) Adopting good irrigation practices	No specific proposal	Not applicable
	(ix) Protection and management of food plain Zones (FPZ)	March 2021	Project Preparation is going on (Re assessment study on the utility and possibility of check dams in river Bhavani will be started soon)
	(x) Rain water harvesting	No specific proposal	Not applicable
	(xi)Maintaining minimum Environmental flow of river	March 2021	Project Preparation is going on(a study to assess the E flow of the river Bhavani at Elachivazhi will be started soon)
	(xii) Plantation on both sides of the river	No specific proposal	Not applicable
	(xiii)Setting up biodiversity parks on flood plains by	No specific	Not applicable

	removing encroachment	proposal	

ACTION PLAN FOR RIVER BHAVANI, KERALA

No. (as per Action Plan)	Activity	Implementing agency	Time line	Progress in the month of July	Progress in the month of August	% works completed	Details of works remaining
C(ii)	Establishment of MSW treatment Plant (Solid Waste Management)	Pudur Grama Panchayath	2019-2020	Own fund position has not sufficient for doing this project, because this project cannot begin	Proposal for a centralized MSW facility replaced with management of wet waste at source level and dry waste MCF. Implementation of MCF is going on	80% implemented	20% implementation of MCF remaining
C(ii)	Material collection Facility (Solid Waste Management)	Pudur Grama Panchayath	2019-2020	building construction 80% completed	90% implemented	90% Implemented	10% implementation of MCF remaining
C(ii)	Construction of Compound wall Material collection Facility Plant	Pudur Grama Panchayath	2019-2020	Implemented	Implemented	Implemented	Implemented
C(ii)	Installing of waste Bin in Colonies	Pudur Grama Panchayath	2019-2020	Installing of waste Bin with the cost	Due to Covid 19 restrictions project	Work not started	Full implementation

				Project cost of - 1008000/-, is not started	progress pending		remaining
C(ii)	Preliminary expenses met for “harithakarmasena”	Pudur Grama Panchayath	2019-2020	Progressing	Progressing		
A(b)	Construction of Community Toilets	Pudur Grama Panchayath	2019-2020	Land has not get for construction of community toilet because this project cannot begin	Work not started	Work not started	Full implementation remaining
A(b)	Repair of Community toilets	Pudur Grama Panchayath	2019-2020	No community toilets in the Panchayath	Not Applicable	Nil	Nil
C(i)	Construction of Protection wall with fencing	Irrigation department	2020-21	No progress reported	No progress reported	No progress reported	No progress reported
C(i)	Seasonal clearance of jungle and muddies from river courses	Irrigation department	2020 - 21	No progress reported	No progress reported	No progress reported	No progress reported
D	Construction of Check dams at the identified locations	Irrigation department	2020 - 21	No progress reported	Re assessment study on the utility and possibility of check dams in river Bhavani	Implementation not started	Full implementation remaining

					will be started soon		
D	Issues relating to Eflow, maintaining minimum environmental flow of river(by having watershed management provisions)	Irrigation department	2020 - 21	Project preparation is going on	a study to assess the E flow of the river Bhavani at Elachivazhi will be started soon	Implementation not started	Full implementation remaining
E	Information Education and Communication (IEC)	Pudur Grama Panchayath	2019 -20	Various awareness programs including notice distributions were carried out in the Panchayath but the existing COVID scenario prevents the further progress	Due to Covid 19 restrictions project progress pending		
A(a)	Monitoring of river water quality by sampling	KSPCB	2019 -20	Water quality monitoring in Bhavani at Elachivazhi	Water quality monitoring in Bhavani at Elachivazhi and three additional	Continued upto March 2021	

				and three additional points were completed upto July 2020	points were completed upto August 2020		
C	Side Protection	Agali Gramapanchayat	2019 -20				

POLLUTED RIVER STRETCH MONITORING PROGRAMME
DATA SHEET AUGUST 2020

Cheerakuzhi (U/S of NWMP-6)

Station Name	RIVER BHAVANI AT ELACHIVAZHI													
Type of Water body	RIVER													
Completed by	DO, PALAKKAD													
Agency	Kerala State Pollution Control Board													
1	Station Code	1	2	0	8									
2	Date and time of sample taken (DD/MM/YY, HH/MM)	03.08.2020												
		1	2	:	0	0								
3	Weather	Cloudy			Clear			Windy			Raining √			
4	Approximate depth of main stream	< 50 cm			50 – 100 cm			>100 cm √			Flood			
5	Color & Intensity	Clear √			Turbid			Green			Brown			
		1 = Light √			2 = Moderate			3 = High						
6	Odour	None √			Fishy			H2S			Other			
7	Floating Matter	Floating Algae			Floating sludge			Oil & Grease			Water Hyacinth			
8	Visible effluent discharges in proximity	Industrial			Municipal sewage			None √						
9	Human activities around the station	Cattle wading √			Tourism spot			Fishing		Bathing √		Other		
10	Location details	U/s of town or			D/s of town or			Pilgrim center/Bathing			None √			
11	Flow rate	110 m^3/s												
12	Major polluting source	Industrial effluent			MSW		PW	None √			Other			
13	Uses of water in downstream	Irrigation √			Drinking water source √					Fishing		Domestic √		
		Organized water source					Cultivation	Bathing Ghat			Others			

Sl.No	Determinant	Value
1	Temperature, ^0C	22
2	pH	7.4
3	Conductivity, µmhos/cm	37
4	Turbidity, NTU	BDL
5	Phenolphthalein Alkalinity, as $CaCO_3$ mg/l	BDL
6	Total Alkalinity, as $CaCO_3$ mg/l	7.9
7	Chloride, mg/l	5.2
8	COD, mg/l	4
9	TKN, mg/l	BDL
10	Ammoniacal-N, mg/l	BDL
11	Hardness, as $CaCO_3$ mg/l	8
12	Calcium, as $CaCO_3$ mg/l	6
13	Magnesium as $CaCO_3$, mg/l	2
14	Sulphate, mg/l	BDL
15	Sodium, mg/l	4.3
16	Total Dissolved Solids, mg/l	22
17	Total Fixed Solids, mg/l	16
18	Total Suspended Solids, mg/l	BDL
19	Phosphate, mg/l	BDL
20	Boron, mg/l	BDL
21	Potassium, mg/l	0.62
22	BOD, mg/l	0.8
23	Fluoride, mg/l	0.389
24	Dissolved Oxygen, mg/l	7.1
25	Nitrate-N, mg/l	0.8
26	Total Coliform, MPN/100 ml	50
27	Fecal Coliform, MPN/100 ml	30
28	Fecal Streptococci MPN/100 ml	10
29	SAR	7.3

POLLUTED RIVER STRETCH MONITORING PROGRAMME
DATA SHEET AUGUST 2020

Chalayur Uru (U/S of NWMP-6)

Station Name	RIVER BHAVANI AT ELACHIVAZHI
Type of Water body	RIVER
Completed by	DO, PALAKKAD
Agency	Kerala State Pollution Control Board

1	Station Code	1	2	0	8										
2	Date and time of sample taken (DD/MM/YY, HH/MM)	03.08.2020													
		1	2	:	5	0									
3	Weather	Cloudy			Clear			Windy			Raining √				
4	Approximate depth of main stream	< 50 cm			50 – 100 cm			>100 cm √			Flood				
5	Color & Intensity	Clear √			Turbid			Green			Brown				
		1 = Light √			2 = Moderate			3 = High							
6	Odour	None √			Fishy			H2S			Other				
7	Floating Matter	Floating Algae			Floating sludge			Oil & Grease			Water Hyacinth				
8	Visible effluent discharges in proximity	Industrial			Municipal sewage			None √							
9	Human activities around the station	Cattle wading √			Tourism spot			Fishing		Bathing √			Other		
10	Location details	U/s of town or			D/s of town or			Pilgrim center/Bathing					None √		
11	Flow rate	120 m^3/s													
12	Major polluting source	Industrial effluent			MSW		PW	None √			Other				
13	Uses of water in downstream	Irrigation √			Drinking water source √					Fishing			Domestic √		
		Organized water source					Cultivation	Bathing Ghat			Others				

Sl.No	Determinant	Value
1	Temperature, ^0C	21
2	pH	7.29
3	Conductivity, µmhos/cm	51
4	Turbidity, NTU	BDL
5	Phenolphthalein Alkalinity, as $CaCO_3$ mg/l	BDL
6	Total Alkalinity, as $CaCO_3$ mg/l	8.2
7	Chloride, mg/l	7.2
8	COD, mg/l	4
9	TKN, mg/l	BDL
10	Ammoniacal-N, mg/l	BDL
11	Hardness, as $CaCO_3$ mg/l	12
12	Calcium, as $CaCO_3$ mg/l	6
13	Magnesium as $CaCO_3$, mg/l	6
14	Sulphate, mg/l	BDL
15	Sodium, mg/l	5.2
16	Total Dissolved Solids, mg/l	15
17	Total Fixed Solids, mg/l	10
18	Total Suspended Solids, mg/l	BDL
19	Phosphate, mg/l	BDL
20	Boron, mg/l	BDL
21	Potassium, mg/l	0.82
22	BOD, mg/l	0.8
23	Fluoride, mg/l	0.401
24	Dissolved Oxygen, mg/l	7.2
25	Nitrate-N, mg/l	1.7
26	Total Coliform, MPN/100 ml	40
27	Fecal Coliform, MPN/100 ml	20
28	Fecal Streptococci MPN/100 ml	ABSENT
29	SAR	6.6

POLLUTED RIVER STRETCH MONITORING PROGRAMME
DATA SHEET AUGUST 2020

Karathur (D/S of NWMP-6)

Station Name	RIVER BHAVANI AT ELACHIVAZHI														
Type of Water body	RIVER														
Completed by	DO, PALAKKAD														
Agency	Kerala State Pollution Control Board														
1	Station Code	1	2	0	8										
2	Date and time of sample taken (DD/MM/YY, HH/MM)	03.08.2020													
		0	1	:	0	0									
3	Weather	Cloudy			Clear			Windy			Raining √				
4	Approximate depth of main stream	< 50 cm			50 – 100 cm			>100 cm √			Flood				
5	Color & Intensity	Clear √			Turbid			Green			Brown				
		1 = Light √			2 = Moderate			3 = High							

6	Odour	None √		Fishy		H2S		Other				
7	Floating Matter	Floating Algae		Floating sludge		Oil & Grease		Water Hyacinth				
8	Visible effluent discharges in proximity	Industrial		Municipal sewage		None √						
9	Human activities around the station	Cattle wading √		Tourism spot		Fishing	Bathing √	Other				
10	Location details	U/s of town or		D/s of town or		Pilgrim center/Bathing		None √				
11	Flow rate	165 m^3/s										
12	Major polluting source	Industrial effluent		MSW	PW	None √		Other				
13	Uses of water in downstream	Irrigation √		Drinking water source √			Fishing	Domestic √				
		Organized water source			Cultivation	Bathing Ghat		Others				

Sl.No	Determinant	Value
1	Temperature, ^0C	23
2	pH	7.28
3	Conductivity, µmhos/cm	52
4	Turbidity, NTU	BDL
5	Phenolphthalein Alkalinity, as $CaCO_3$ mg/l	BDL
6	Total Alkalinity, as $CaCO_3$ mg/l	7.3
7	Chloride, mg/l	7.8
8	COD, mg/l	4
9	TKN, mg/l	BDL
10	Ammoniacal-N, mg/l	BDL
11	Hardness, as $CaCO_3$ mg/l	12
12	Calcium, as $CaCO_3$ mg/l	6
13	Magnesium as $CaCO_3$, mg/l	6
14	Sulphate, mg/l	BDL
15	Sodium, mg/l	5.2
16	Total Dissolved Solids, mg/l	32
17	Total Fixed Solids, mg/l	23
18	Total Suspended Solids, mg/l	BDL
19	Phosphate, mg/l	BDL
20	Boron, mg/l	BDL
21	Potassium, mg/l	0.82
22	BOD, mg/l	0.8
23	Fluoride, mg/l	0.421
24	Dissolved Oxygen, mg/l	7.1
25	Nitrate-N, mg/l	1.7
26	Total Coliform, MPN/100 ml	60
27	Fecal Coliform, MPN/100 ml	40
28	Fecal Streptococci MPN/100 ml	10
28	SAR	6.6

NATIONAL WATER QUALITY MONITORING PROGRAMME

Station Name		RIVER BHAVANI AT ELACHIVAZHI										
Type of Water body		RIVER										
Completed by		DO, PALAKKAD										
Agency		Kerala State Pollution Control Board										
1	Station Code	1	2	0	8							
2	Date and time of sample taken (DD/MM/YY, HH/MM)	03.08.2020										
		1	1	:	5	0						
3	Weather	Cloudy		Clear		Windy		Raining √				
4	Approximate depth of main stream	< 50 cm		50 – 100 cm		>100 cm √		Flood				
5	Color & Intensity	Clear √		Turbid		Green		Brown				
		1 = Light √		2 = Moderate		3 = High						
6	Odour	None √		Fishy		H_2S		Other				
7	Floating Matter	Floating Algae		Floating sludge		Oil & Grease		Water Hyacinth				
8	Visible effluent discharges in proximity	Industrial		Municipal sewage		None √						
9	Human activities around the station	Cattle wading √		Tourism spot		Fishing	Bathing	Other				
10	Location details	U/s of town or		D/s of town or		Pilgrim center/Bathing		None √				
11	Flow rate	121.5 m^3/s										
12	Major polluting source	Industrial effluent		MSW	PW	None √		Other				
13	Uses of water in downstream	Irrigation √		Drinking water source √			Fishing	Domestic				
		Organized water source			Cultivation	Bathing Ghat		Others				

Sl.No	Determinant	Value
1	Temperature, ^0C	22
2	pH	7.36
3	Conductivity, µmhos/cm	48
4	Turbidity, NTU	BDL
5	Phenolphthalein Alkalinity, as $CaCO_3$ mg/l	BDL
6	Total Alkalinity, as $CaCO_3$ mg/l	8.6
7	Chloride, mg/l	7.3
8	COD, mg/l	4
9	TKN, mg/l	BDL
10	Ammoniacal-N, mg/l	BDL
11	Hardness, as $CaCO_3$ mg/l	12
12	Calcium, as $CaCO_3$ mg/l	10
13	Magnesium as $CaCO_3$, mg/l	2
14	Sulphate, mg/l	BDL
15	Sodium, mg/l	4.1
16	Total Dissolved Solids, mg/l	30
17	Total Fixed Solids, mg/l	21
18	Total Suspended Solids, mg/l	BDL
19	Phosphate, mg/l	BDL
20	Boron, mg/l	BDL
21	Potassium, mg/l	0.9
22	BOD, mg/l	0.3
23	Fluoride, mg/l	0.389
24	Dissolved Oxygen, mg/l	7.1
25	Nitrate-N, mg/l	0.89
26	Total Coliform, MPN/100 ml	80
27	Fecal Coliform, MPN/100 ml	20
28	Fecal streptococci , MPN/100 ml	ABSENT
29	SAR	5.8

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National Mission for Clean Ganga

Format for Submission of Monthly Progress Report by States/UTs

(Hon'ble NGT in the matter of OA No.673/2018 dated 06.12.2019)

RIVER TIRUR, MALAPPURAM

S. No.	Activity to be monitored	Timeline	Submission of progress by state/UT-Compliance status
1	Ensure 100% treatment of sewage at least in-situ remediation	31.03.2020	
	Commencement of setting up of STPs and connecting all the drains and other sources of generation of sewage to the STPs must be ensured	31.03.2020	
2	Timeline for completing all steps of action plans including completion of setting up STPs and their Commissioning	31.03.2020	
5	Chief Secretaries may set up appropriate monitoring mechanism at state level • Specifying accountability of nodal authorities not below the Secretary level • Chief Secretaries may have an accountable person attached in their office for this purpose.	22.01.2020 22.01.2020	
	• Monitoring at State level must take place	Fortnightly commencing 21.12.2019	
6	Progress report may be furnished by the	Monthly	

	State/UTs to • Secretary, Ministry of Jal Shakti • Member Secretary, CPCB	(preferably before 20th of every month)	

6.1	Progress Report may be comprised of details along with completion timelines on: (I) Identification of polluting sources including drains contributing to river pollution and action as per NGT order on in-situ treatment. (II) <u>Status of STPs, I&D and sewerage networks</u> Details of Existing Infrastructure, Gap Analysis, Proposed along with completion timeline (III) <u>Status of CETPs</u> Details of Existing CETP and ETP Infrastructure, Gap Analysis, Proposed along with completion timeline, No. of industries and complying status (iv) <u>Status of Solid Waste Management & Details of Processing Facilities</u> Details of Existing Infrastructure, Gap Analysis, Proposed along with completion timeline (v)Latest water quality of polluted river, its tributaries, drains with flow details and ground water quality in the catchment of polluted river;		Last updated report submitted was on 15 July 2020 Identified 17 drains out of which 9 were additionally identified on 11.07.2019 Market – 45 KLD- finished Bus stand -50 KLD – under construction (expected time period was June 2020, but works slowed down due to COVID 19 Nil Disposal using sanitary landfills, composting, operations , MRF, MCF etc Attached as Annexure II(Analysis report during the month of August 2020)

	(vi)Preventing dumping of waste and scientific waste management including bio-medical waste, plastic waste and decentralizing waste processing, including waste generated from hotels, Ashrams, etc.		Biomedical waste disposal through IMAGE Plastic waste through Municipality undertaking Decentralized waste processing through biogas , compost plants etc
	(vii)Ground water regulation		Permission of extraction of ground water by local body
	(viii) Adopting good irrigation practices,		Effluent from industrial units utilized after treatment
	(ix) Protection and management of food plain Zones (FPZ),		FPZ are identified
	(x) Rain water harvesting,		Enforced through local bodies
	(xi)Maintaining minimum Environmental flow of river		Dumping of SW on river banks are controlled River rejuvenation measures are taken
	(xii) Plantation on both sides of the river		Initiated
	(xiii) Setting up biodiversity parks on flood plains by removing encroachment		Initiated

ACTION PLAN FOR RIVER TIRUR, KERALA

1. IRRIGATION DEPARTMENT

No.	Activity	Implementing agency	Time line	Progress in the month of July 2020	Progress in the month of August 2020	% works comple ted	Details of works remaining
1.1.1	Strengthening the right side bund of Tirur- Ponnani puzha at Porur, ward no.I Tirur Municipality	Irrigation Department	6 Months	DPR under preparation	Detailed estimate submitted to Chief Engineer		Work to be started
1.1.2	Cleaning and development of old Ponnani thodu at Thazhepalam	Irrigation Department	6 Months	DPR under preparation	Detailed estimate submitted to Chief Engineer		
1.1.3	Repair and Rehabilitation of Koottayi Regulator cum Bridge across Thirur-Ponnani Puzha in Mangalam Grama panchayat in Malappuram Dist	Irrigation Department	18 Months	Detailed estimate submitted to Chief Engineer	Detailed estimate submitted to Chief Engineer		

2. TIRUR MUNICIPALITY – SHORT TERM ACTION PLAN

No.	Activity	Implementing agency	Time line	Progress in the month of July 2020	Progress in the month of August 2020	% works completed	Details of works remaining
1.2.1	Provide septic tank for nearest houses	Tirur Municipality	Dec 2019		completed	100%	Nil
1.2.2	Establishment of Solid waste Treatment Plant ThumboorMozhi Model Aerobic Bin	Tirur Municipality	March 2020		completed	100%	nil
1.2.3	Establishment of Non Degradable waste treatment Plant Resource Recovery facility Centre Plastic Shredding Unit Segregation shed	Tirur Municipality	March 2020		Completed Shredding unit is converted to bale unit-supply order issued completed	100% 100%	
1.2.4	Slaughtering House	Tirur Municipality	December 2020		Civil work is completed for installation of mechanical parts-agreement executed		

1.2.5	Fencing on Bridgeside Thalakkadathur Bridge	Tirur Municipality	December 2020	Project formulated and DPC approved Under progress	completed	100 %	
1.2.6	Installation of CCTV Camera near the river Bank Thalakkadathur Bridge	Tirur Municipality	May 2020	Project formulated and DPC approved- Implementation in progress	In progress		
1.2.7	Planting of Bamboo seedlings on the river bank (Thazhepalam)	Tirur Municipality	June 2020		completed		
1.2.8	Renovation of Effluent treatment plant at fish Market AMC Granted ETP with Aeorobic System	Tirur Municipality Tirur Municipality	June 2019		Work completed-started operation		
1.2.9	Setting up of STP at Private Bus stand	Tirur Municipality	June 2020	Work in progress	Civil works almost completed, installation works to be done. A meeting will be held on 17.09.2020 to monitor the progress of the plant by the river action committe		
1.2.10	Setting up of a new drain after demolishing the old one. The old one was the hub of the waste water outlet of the shops and other establishments. The proposed drain is	Tirur Municipality	June 2020		completed	100%	

	constructing in the middle of the road so as to avoid intrusion of pipes from outside						
1.2.11	Identification of illegal outlets into storm water drains and fine shall be imposed on such units	Tirur Municipality			Fine imposing mechanism is going on		

3. Cheriyamundam Grama panchayat

No.	Activity	Implementing agency	Time line	Progress in the month of July 2020	Progress in the month of August 2020	% works completed	Details of works remaining
1.3.1	Fencing on bridge side Thalakkadatur	Cheriyamundam Grama panchayat	March 2020		completed	100%	nil

4.Kerala State Pollution Control Board

No.	Activity	Implementing agency	Time line	Progress in the month of July 2020	Progress in the month of August 2020	% works completed	Details of works remaining
1.4.1	River water quality Monitoring-Thalakkadathur National Water Quality Programme(NWMP)	KSPCB	Ongoing; Monthly frequency	Sample is collected every month and analysed .BOD values are within limit	Sample is collected every month and analysed.BOD values are within limit	100%	
1.4.2	River water quality Monitoring State Water monitoring	KSPCB	Ongoing; Seasonal			100%	

	programme (SWMP)						
1.4.3	Inspection and effluent quality monitoring of the flats, Industrial units, Service stations, hospitals, auditorium, hotels in Municipal area		Ongoing; Interval; Red – 1 month, Orange- 3 months, Green- 6 months		Periodically inspected effluent sample collected from the ETP's and analysed . Notice issued to the units , non complying with effluent standards to rectify defects	100%	
5.Ground Water Department							
No.	Activity	Implementing agency	Time line	Progress in the month of July 2020	Progress in the month of August 2020	% works completed	Details of works remaining
1.5.1.	Ground Water resources and regulation of ground water extraction by industries particularly in over exploited as critical zones/blocks (Earlier status : As per Groundwater resources of Kerala, 2017 estimate a total number of 2 blocks (Tirur and Kuttippuram) comes under the Tirur river basin. These two blocks are semi-critical blocks	Ground water Department		**No action included in the approved action plan to be performed by Ground Water Department**			

	and the stage of groundwater extraction ranges from 77.75 % to 77.92%)						
1.5.2	Ground water recharging / rain water harvesting (Earlier status : The average pre - monsoon groundwater level ranges from 6.14mbgl - 8.49 mbgl.)			**No action included in the approved action plan to be performed by Ground Water Department**			
1.5.3	Periodic ground waste quality assessment and remedial actions in case of contaminated ground water tube wells/bore wells or hand pumps (Earlier status : No observation well along the river stretches)			**No action included in the approved action plan to be performed by Ground Water Department**			
1.5.4	For regulating use of ground water for irrigation purpose, adopting good irrigation practices (Earlier status : The total irrigation draft in the area ranges from 49.14 - 870.97 ha.m.)			**No action included in the approved action plan to be performed by Ground Water Department**			

6. ACTION PLAN BY VARIOUS GRAMA PANCHAYATHs- Thalakkad, Vettom, Mangalam

No.	Activity	Implementing agency	Time line	Progress in the month of July 2020	Progress in the month of August 2020	% works compl eted	Details of works remaining
1.6.1	Protection of Thirur Ponnani River	Thalakkad grama panchayath handover fund to District Panchayat	31.03.2020		Work in progress. May be extended to 31.03.2021		
1.6.2	Installation of CC TV camera on Yetterikadavu Kunjulikkadavu Mangattiri Bridge, Aikkanchiri Bridge, Paravanna Bridge	Vettom - KS SECURITY SYSTEM	Completed		Completed	100%	
1.6.3	Installation of CC TV camera	Mangalam grama panchayath Win Plus Agency, Kondotty	Completed			100%	
1.6.4	Haritha Keralam Thirur-Ponnani puzha protection	Mangalam grama panchayath Nirmithi Kendra, Kozhikkodu	31.03.2020				

ANALYSIS REPORT OF POLLUTED STRETCH POINTS IN KADALUNDY RIVER –AUGUST ALONG HAJIYARPALLY

Sl .No	Name of point	PARAMETERS				
		p^H	DO (mg/l)	BOD(mg/l)	COD(mg/l)	FC (cfu/100ml)
1	Valiyangadi drain	6.6	6.2	2.6	10.4	88
2	Valiyangadi bypass drain	5.9	4.9	1.8	7.6	92
3	Valiyathod drain	6.4	6.8	2.2	9.2	112
4	Hajiyarpally	6.8	6.6	2	8	104

National Mission for Clean Ganga

Format for Submission of Monthly Progress Report by States/UTs

(Hon'ble NGT in the matter of OA No.673/2018 dated 06.12.2019)

RIVER KADALUNDI, MALAPPURAM

S. No.	Activity to be monitored	Timeline	Submission of progress by state/UT-Compliance status
1	Ensure 100% treatment of sewage at least in-situ remediation		
	Commencement of setting up of STPs and connecting all the drains and other sources of generation of sewage to the STPs must be ensured		
2	Timeline for completing all steps of action plans including completion of setting up STPs and their Commissioning		
5	Chief Secretaries may set up appropriate monitoring mechanism at state level • Specifying accountability of nodal authorities not below the Secretary level • Chief Secretaries may have an accountable person attached in their office for this purpose.		
	• Monitoring at State level must take place		
6	Progress report may be furnished by the State/UTs to • Secretary, Ministry of Jal Shakti • Member Secretary, CPCB		
6.1	Progress Report may be comprised of details		Last updated report submitted was on July 15 2020

	along with completion timelines on: (I) Identification of polluting sources including drains contributing to river pollution and action as per NGT order on in-situ treatment.		Identified 3 drains on 10.12.2018
	(II) Status of STPs, I&D and sewerage networks Details of Existing Infrastructure, Gap Analysis, Proposed along with completion timeline		Malappuram municipality – 30 KLD finished – not started operating recently as inspected on 16.09.2020. Direction letter issued to complete maintenance and start functioning
	(III) Status of CETPs Details of Existing CETP and ETP Infrastructure, Gap Analysis, Proposed along with completion timeline, No. of industries and complying status		Nil
	▪ Status of Solid Waste Management & Details of Processing Facilities Details of Existing Infrastructure, Gap Analysis, Proposed along with completion timeline		Disposal using sanitary landfills, composting, operations, MRF, MCF etc
	▪ Latest water quality of polluted river, its tributaries, drains with flow details and ground water quality in the catchment of polluted river;		Attached as Annexure I(analysis report of month of August)
	▪ Preventing dumping of waste and scientific		

	waste management including bio-medical waste, plastic waste and decentralizing waste processing, including waste generated from hotels, Ashrams, etc.		Biomedical waste disposal through IMAGE Plastic waste through Municipality undertaking Decentralized waste processing through biogas , compost plants etc
	(vii) Ground water regulation		Permission of extraction of ground water by local body
	(viii) Adopting good irrigation practices,		Effluent from industrial units utilized after treatment
	(ix) Protection and management of food plain Zones (FPZ),		FPZ are identified
	(x) Rain water harvesting,		Enforced through local bodies
	(xi) Maintaining minimum Environmental flow of river		Dumping of SW on river banks are controlled River rejuvenation measures are taken
	(xii) Plantation on both sides of the river		Initiated
	(xiii) Setting up biodiversity parks on flood plains by removing encroachment		Initiated

ACTION PLAN FOR RIVER KADALUNDI, MALAPPURAM, KERALA

1. Malappuram Municipality - Short Term Solid & Liquid Waste Management Action Plan

No.	Activity	Implementing agency	Time line	Progress in the month of July 2020	Progress in the Month of August 2020	% works completed	Details of works remaining

1.1	Slaughter house and Poultry house	Malappuram Municipality	July 2010		Date shall be extended to March 2021		
1.2	Valiyathodu Cleaning - 8 Km length	Malappuram Municipality	Completed		completed	100%	
1.3	Installation of screening net in the Valiyathode	Malappuram Municipality	Completed		completed	100%	
1.4	Identification of polluting points in Kadalundi river & awareness campaign - River walk(puzha nadatham – 15 km length)	Malappuram Municipality	Completed		completed	100%	
1.5	Sanitation facility and treatment of waste water in the markets - Treatment plant	Malappuram Municipality	Completed		completed	100%	
1.6	The discharge of waste water from the surrounding houses to the Valiyathodu - Blocking of discharge of liquid waste	Malappuram Municipality	Completed		completed	100%	
1.7	Identification of illegal outlets into storm water drains and fine imposed on such units.	Malappuram Municipality	Ongoing		Completed	100%	
1.8	Biodegradable waste Bio bins – 176	Malappuram Municipality	March 2020		Date shall be extended to March 2021		

	Bucket compost – 269 Thumboormuzhi Aerobic bins - 4 Biogas plant -55		March 2020 March 2020 March 2020 March 2020		" " " "		
1.9	Non biodegradable waste MCF Plastic shredding and Bailing Echo Kiosk	Malappuram Municipality	Completed Completed March 2020	In progress	3 MCF completed completed Shall be extended to march 2021	100% 100%	
1.10	Identification and monitoring of illegal activities CC tv Network installation	Malappuram Municipality	March 2020		Shall be extended to march 2021		

2.Kerala State Pollution Control Board

No.	Activity	Implementing agency	Time line	Progress in the month of July 2020	Progress in the month of August 2020	% works completed	Details of works remaining
2.1	River water quality Monitoring- Thirurangadi, Ha jiyarpally	KSPCB	Ongoing; Monthly frequency			100%	

	National Water Quality Programme(NWMP)						
2.2	River water quality Monitoring - Thirurangadi, Kooriyad, Manikut, Hajiyarpally, Anakkayam, Oravambrum - State Water monitoring programme (SWMP)	KSPCB	Ongoing; Seasonal - Pre - monsoon, monsoon, post - monsoon			100%	
2.3	Inspection and effluent quality monitoring of the flats, industrial units, service stations, hospitals, hotels etc. in Malappuram Municipal area	KSPCB	Ongoing; Interval; Red – 1 month, Orange- 3 months, Green- 6 months			100%	

3.Ground Water Department

No.	Activity	Implementing agency	Time line	Progress in the month of July 2020	Progress in the month	% works completed	Details of works

					of August 2020		remaining
3.1.	Ground Water resources and regulation of ground water extraction by industries particularly in over exploited as critical zones/blocks (Earlier status : As per Groundwater resources of Kerala, 2017 estimate a total number of 3 blocks (Mankada, Vengara and Malappuram) comes under the Kadalundi river basin. Out of three blocks Malappuram and Vengara are semi-critical blocks and the rest is a safe one, stage of groundwater extraction ranges from 69.43 % to 79.84%)	Ground water Department		**No action included in the approved action plan to be performed by Ground Water Department**			

3.2	Ground water recharging / rain water harvesting (Earlier status : The average pre - monsoon groundwater level ranges from 7.59mbgl - 13.57 mbgl. Groundwater Department has implemented 3 no of roof top rain water recharging through recharge pit schemes in Vengara block.)	Ground water Department		**No action included in the approved action plan to be performed by Ground Water Department**			
3.3	Periodic ground waste quality assessment and remedial actions in case of contaminated ground water tube wells/bore wells or hand pumps (Earlier status : Groundwater Department has 6 observation dug wells and 14 bore wells in the river stretch. (report attached) (Map No: 7 attached))	Ground water Department		**No action included in the approved action plan to be performed by Ground Water Department**			

3.4	For regulating use of ground water for irrigation purpose, adopting good irrigation practices (Earlier status : The total irrigation draft in the area ranges from 979.683 - 1857.49 ha.m.)	Ground water Department		**No action included in the approved action plan to be performed by Ground Water Department**			

ANALYSIS REPORT OF POLLUTED STRETCH POINTS IN KADALUNDY RIVER –AUGUST ALONG HAJIYARPALLY

Sl .No	Name of point	PARAMETERS				
		p^H	DO (mg/l)	BOD(mg/l)	COD(mg/l)	FC (cfu/100ml)
1	Valiyangadi drain	6.6	6.2	2.6	10.4	88
2	Valiyangadi bypass drain	5.9	4.9	1.8	7.6	92
3	Valiyathod drain	6.4	6.8	2.2	9.2	112
4	Hajiyarpally	6.8	6.6	2	8	104

FORMAT 3

Kerala State Pollution Control Board DO Kasaragod

National Mission for Clean Ganga

Format for Submission of Monthly Progress Report by States/UTs

(Hon ble NGT in the matter of OA No.673/2018 dated 06.12.2019)

UPPALA RIVER – AUGUST 2020

S. No.	Activity to be monitored	Timeline	Submission of progress by state/UT-Compliance status	Progress for the month of August, 2020
1	Ensure 100% treatment of sewage at least in-situ remediation			
	Commencement of setting up of STPs and connecting all the drains and other sources of generation of sewage to the STPs must be ensured			
2	Timeline for completing all steps of action plans including completion of setting up STPs and their Commissioning			
5	Chief Secretaries may set up appropriate monitoring mechanism at state level • Specifying accountability of nodal authorities not below the Secretary level			

	• Chief Secretaries may have an accountable person attached in their office for this purpose.			
	• Monitoring at State level must take place			
6	Progress report may be furnished by the State/UTs to • Secretary, Ministry of Jal Shakti • Member Secretary, CPCB	Monthly (preferably before 20th of every month)		
6.1	Progress Report may be comprised of details along with completion timelines on: (I) Identification of polluting sources including drains contributing to river pollution and action as per NGT order on insitu treatment. (II) <u>Status of STPs, I&D and sewerage networks</u> Details of Existing Infrastructure,Gap Analysis, Proposed along with	Dumping plastics and wastes by public from Uppala NH bridge in Mangalpady Grama Panchayath	Fencing work on both sides of Uppala NH Bridge proposed by Irrigation Department, Kasaragod. Mostly rural area. No separate STP provided. Mostly scattered houses, individual septic tank	Estimate submitted to Chief Engineer through PRICE ID: 2019/10825/IA dated 15.11.2019 for approval.

	completion timeline (III) <u>Status of CETPs</u> Details of Existing CETP and ETP Infrastructure, Gap Analysis, Proposed along with completion timeline, No. of industries and complying status. (iv) <u>Status of Solid Waste Management & Details of Processing Facilities</u> Details of Existing Infrastructure, Gap Analysis, Proposed along with completion timeline	.	soak pit system provided. No CETP. **<u>Mangalpady Grama Panchayath-</u>** MCF located at Kubanur. Solid waste is been collected daily by a private company named as Green Space. Installation of camera for waste dumping monitoring.	Solid waste collection is ongoing and annual report not yet submitted. Since pandemic works are being interrupted. Proposal being prepared with an estimated expenditure of Rs. 20 Lakhs.

	.		**<u>Manjeshwar Grama Panchayath</u>**- MCF and plastic shredding unit provided. Solid waste is been collected daily by a private company named as Green Space. Installation of camera along with warning boards.	Both completed but yet to start working. Since pandemic works are being interrupted. Completed and installed.
	(v) Latest water quality of polluted river, its tributaries, drains with flow details and ground water quality in the catchment of polluted river;		Attached the analysis report of water quality in the month of August 2020.	
	(vi)Preventing dumping of waste and scientific waste management including bio-medical waste, plastic		Hotel waste is disposed through pig farms. Fencing work on both	Estimate submitted to Chief Engineer through PRICE ID : 2019/10825/IA

	waste and decentralizing waste processing, including waste generated from hotels, Ashrams, etc. (vii)Ground water regulation (viii) Adopting good irrigation practices, (ix) Protection and management of food plain Zones (FPZ), (x) Rain water harvesting, (xi) Maintaining minimum Environmental flow of river		sides of Uppala NH Bridge proposed by Irrigation Department, Kasaragod. The river (stream) has a length of 50 km with drainage area of 250 sq. km of which 174 sq. km of the catchment lie in Karnataka and 76 sq.km is in Kerala. The river is seasonal. The river goes dry during summer in the upstream and sea water inflow in tail ends. Uppala bridge, the	dated 15.11.2019 for approval. The water level in Uppala River has increased with medium flow in the month of August 2020.

			NWMP sampling station, which is 1.25 km away from the seashore, is just downstream of the identified polluted river stretch. The tidal water is entering the river to a few kilometres.	
	(xii) Plantation on both sides of the river		Thick vegetation present on the banks. Paddy fields and coconut farms are present on both sides of the river.	
	(xiii) Setting up biodiversity parks on flood plains by removing encroachment			

Sd/-

The Environmental Engineer

ACTION PLAN FOR RIVER UPPALA, KERALA

No. (as per Action Plan)	Activity	Implementing agency	Time line	Progress in the month of July	Progress in the month of August	% works completed	Details of works remaining
C(ii)	Material collection facility. Operation	Mangalpady Grama Panchayath	2019	Work completed and operation started. MCF is located at Kubanur. Activity continuing.	Activity continuing.	100%	Completed
C	Waste management including purchase of vehicle to collect waste.	Mangalpady Grama Panchayath	2019- 2020	Waste being collected by a panchayath vehicle from nearby apartments and shops. Solid waste is also being collected daily by a private company named as Green Space.	Work being carried out regularly		Approval for purchase of vehicle not sanctioned from Government.

E	Installation of camera	Mangalpady Grama Panchayath	March 2020				Project dropped
C	Electrification of material collection facility	Manjeshwaram Grama Panchayat	2019-2020	100%	-	100%	COMPLETED on 12/2019.
D	Transportation of collected waste	Manjeshwaram Grama Panchayat	March 2020	995m3 Waste collected from various public places and River sides and transported to Disposal center in March and 338m3 Waste collected in June 2020. Due to spread of Covid, work interrupted in July 2020.	Due to spread of Covid, work interrupted.	-	Work yet to be completed.
E	Installation of camera	Manjeshwaram Grama Panchayat	March 2020	-	-	-	Project Prepared and waiting for DPC Approval
C	Tying of net on both sides of the bridge	Irrigation Department	-	Estimate for fencing work on both sides of Uppala NH Bridge submitted to Chief Engineer	Work still under process.		Work still under process.

				through PRICE ID: 2019/10825/IA dated 15.11.2019 for approval.			
E	Continuous vigil on waste dumping on roads	Police Department	-	Completed	Completed	100%	Completed
A(a)	Water quality monitoring	KSPCB	Being done regularly	Water quality is being monitored by KSPCB, Kasaragod regularly.			

UPPALA RIVER - UPPALA BRIDGE (Existing NWMP Station)			
Sampling Point			Uppala Bridge
NWMP Station Code			2306
Latitude			12˚41'41.7"N
Longitude			74˚54'16.9"E
Date of Sampling			18.08.2020
Nature and flow of the river			Medium flow, water level rised
Sl.No	Parameters	Unit	Uppala Bridge
1	Temperature	˚ C	28
2	pH	-	6.9
3	Conductivity	µmhos/cm	137
4	Turbidity	NTU	1.8
5	BOD	mg/l	2
6	Dissolved Oxygen	mg/l	8.7
7	Total Coliforms	cfu/100ml	320
8	Feacal Coliforms	cfu/100ml	84
9	Feacal Streptococcus	cfu/100ml	30
10	Chlorides	mg/l	18
11	Total Alkalinity	mg/l	40
12	Total Hardness	mg/l	45
13	Calcium Hardness	mg/l	40
14	Magnesium Hardness	mg/l	5
15	Calcium	mg/l	16
16	Magnesium	mg/l	1.2
17	Total Dissolved Solids	mg/l	82
18	Sodium	mg/l	10
19	Potassium	mg/l	2.3

UPPALA RIVER - UPPALA RIVER NEAR BHAGAVATHI TEMPLE (Bhagavathi Gate) (Proposed NWMP Station)			
Sampling Point			Uppala River Near Bhagavathi Temple (Bhagavathi Gate)
Distance from existing NWMP Station			878.66 m
Latitude			12˚41'20.1"N
Longitude			74˚54'34.0"E
Date of Sampling			18.08.2020
Nature and flow of the river			Water level rised, Medium flow
Sl.No	Parameters	Unit	Uppala River Near Bhagavathi Temple (Bhagavathi Gate)
1	Temperature	˚ C	29
2	pH	-	6.82
3	Conductivity	µmhos/cm	85
4	Turbidity	NTU	8.7
5	BOD	mg/l	1.4
6	Dissolved Oxygen	mg/l	6.1
7	Total Coliforms	cfu/100ml	150
8	Feacal Coliforms	cfu/100ml	56
9	Feacal Streptococcus	cfu/100ml	20
10	Chlorides	mg/l	14
11	Total Alkalinity	mg/l	24
12	Total Hardness	mg/l	24
13	Calcium Hardness	mg/l	14
14	Magnesium Hardness	mg/l	10
15	Calcium	mg/l	5.6
16	Magnesium	mg/l	2.4
17	Total Dissolved Solids	mg/l	50
18	Sodium	mg/l	8
19	Potassium	mg/l	1.1

Sd/-
Assistant Scientist

Kerala State Pollution Control Board DO Kasaragod

National Mission for Clean Ganga

Format for Submission of Monthly Progress Report by States/UTs

(Hon ble NGT in the matter of OA No.673/2018 dated 06.12.2019)

MOGRAL RIVER – AUGUST 2020

S. No.	Activity to be monitored	Timeline	Submission of progress by state/UT-Compliance status	Progress for the month of August, 2020
1	Ensure 100% treatment of sewage at least in-situ remediation			
	Commencement of setting up of STPs and connecting all the drains and other sources of generation of sewage to the STPs must be ensured			
2	Timeline for completing all steps of action plans including completion of setting up STPs and their Commissioning			
5	Chief Secretaries may set up appropriate monitoring mechanism at state level • Specifying accountability of nodal authorities not below the Secretary level			

	• Chief Secretaries may have an accountable person attached in their office for this purpose.			
	• Monitoring at State level must take place			
6	Progress report may be furnished by the State/UTs to • Secretary, Ministry of Jal Shakti • Member Secretary, CPCB	Monthly (preferably before 20th of every month)		

6.1	Progress Report may be comprised of details along with completion timelines on: (I) Identification of polluting sources including drains contributing to river pollution and action as per NGT order on insitu treatment. (II) <u>Status of STPs, I&D and sewerage networks</u> Details of Existing Infrastructure, Gap Analysis, Proposed along with completion timeline (III) <u>Status of CETPs</u> Details of Existing CETP and ETP Infrastructure, Gap Analysis, Proposed along with completion timeline, No. of industries and complying status.	Dumping plastics and wastes by public from Mogral NH bridge in Mogral Puthur Grama Panchayath.	Fencing work on both sides of Mogral NH Bridge at Mogral Kadavath proposed by Irrigation Department, Kasaragod. Mostly rural area. No separate STP provided. Mostly scattered houses, individual septic tank soak pit system provided. No CETP	DPR submitted to the CE (I&A) on 27.11.2019 for FS approval. Estimate submitted to Chief Engineer through PRICE ID: 2019/10715/IA dated 15.11.2019 for approval.

	(iv) <u>Status of Solid Waste Management & Details of Processing Facilities</u> Details of Existing Infrastructure, Gap Analysis, Proposed along with completion timeline	December 2020	**<u>Mogral Puthur Grama Panchayath -</u>** MCF provided. Waste being collected through Haritha Karma Sena. Installation of camera for waste dumping monitoring. **<u>Madhur Grama Panchayath</u>** – MCF located at panchayath premises. Before lockdown, Haritha Karma Sena used to collect solid waste. **<u>Chengala Grama Panchayath -</u>** MCF is proposed and site identified.	Since Pandemic works are partially affected. Proposal being prepared with an estimated expenditure of Rs. 2 Lakhs. Due to Pandemic lockdown works are interrupted.

	(v) Latest water quality of polluted river, its tributaries, drains with flow details and ground water quality in the catchment of polluted river;		Attached the analysis report of water quality for the month of August 2020. Also attached the analysis report of the drain joining the Mogral river.	
	(vi) Preventing dumping of waste and scientific waste management including bio-medical waste, plastic waste and decentralizing waste processing, including waste generated from hotels, Ashrams, etc.		Hotel waste is disposed through pig farms. Fencing work on both sides of Mogral NH Bridge at Mogral Kadavath proposed by Irrigation Department, Kasaragod.	DPR submitted to the CE (I&A) on 27.11.2019 for FS approval. Estimate submitted to Chief Engineer through PRICE ID: 2019/10715/IA dated 15.11.2019 for approval.
	(vii)Ground water regulation (viii) Adopting good irrigation practices, (ix) Protection and management of food plain Zones (FPZ),			

	(x) Rain water harvesting, (xi)Maintaining minimum Environmental flow of river		The river (stream) is very short (total length 34 km) and seasonal. The river goes dry during the summer in the upstream and sea water inflow in tail ends. Mogral bridge is just downstream of the NWMP sampling station. Within 5 km from the point of sampling the width of the river reduces from 70 - 80 m to 20 m on the upstream and within the next 2 km upstream it reduces to just 8 m. The river mouth up	The water level in Mogral River has increased with medium flow in the month of August 2020.

			to a length of few kilo meters gets water mainly due to tides. The NWMP sampling station is just half kilometres from the sea shore. Thick vegetation present on the banks. Coconut and arecanut farms are present on both sides of the river.	
	(xii) Plantation on both sides of the river (xiii) Setting up biodiversity parks on flood plains by removing encroachment			

Sd/-

The Environmental Engineer

ACTION PLAN FOR RIVER MOGRAL, KERALA

No. (as per Action Plan)	Activity	Implementing agency	Time line	Progress in the month of July	Progress in the month of August	% works completed	Details of works remaining
C	Material collection facility	Mogral Puthur Grama Panchayath	March 2020	Work completed not yet started.	Work completed not yet started.	-	Work completed not yet started.
C	Waste collection including vehicle hire charge to collect waste.	Mogral Puthur Grama Panchayath	March 2020	Work in progress with an estimated expenditure of Rs. 3.5 lakhs. Time line extended (due to pandemic) to December 2020. Currently waste being collected through Haritha Karmasena.	Work in progress	-	Work in progress
E	Installation of camera	Mogral Puthur Grama Panchayath	June 2020	Proposal being prepared with an estimate of Rs. 2	-	-	Time limit extended (due to

				lakhs.			pandemic) to December 2020.
A(b)	Ballor, Kottakkunnu, Majal, Neerchal, Blarkode, Goovathadka, Pernadka, Shankra, Eriyal, KK Puram Arjal Vishnu Temple Drainage Cleaning	Mogral Puthur Grama Panchayath	2019	Report not yet received.			
C(ii)	Haritha Karmasena Activity/ Collecting Non Bio degradable materials including Plastics from households	Mogral Puthur Grama Panchayath	On-going	Collection being carried out by Haritha Karmasena. But due to pandemic the work has been interrupted.	Due to spread of Covid 19, work halted.		Due to spread of Covid 19, work halted.
C(iii)	Bamboo Capital Bamboo Planting - aiming water conservation and raising water levels thus preventing solid erosion, waste dumping in public places	Mogral Puthur Grama Panchayath	On-going	Report not yet received.			
E	River cleaning	Mogral Puthur Grama Panchayath	2019	Report not yet received.			
C(iii)	Bamboo Plantation of Madhur	Madhur grama Panchayath	2019	18500 being maintained by NREGA	18500 being maintained by NREGA	100 %	Completed
C(ii)	Viability Gap Funding for Haritha Karmasena	Madhur grama	2019	Partially utilised	Partially utilised	15%	Partially utilised

		Panchayath					
C(ii)	Material recovery facility centre	Madhur grama Panchayath	2019	Completed	Completed	100%	Completed
C(ii)	Construction of Plastic Shredding Machine building	Madhur grama Panchayath	2019	Completed	Completed	100 %	Completed
C(ii)	Purchase of Plastic shredding machine	Madhur grama Panchayath	2019	Yet to tender	Yet to tender		Yet to tender
C	Tying of net on both sides of the bridge	Irrigation Department	-	Estimate for fencing work on both sides of Mogral NH Bridge submitted to Chief Engineer through PRICE ID: 2019/10715/IA dated 15.11.2019 for approval.	Work still under process.		Work still under process.
A(a)	Water quality monitoring	KSPCB	Being done regularly	Water quality is being monitored by KSPCB, Kasaragod regularly.			

MOGRAL RIVER - MOGRAL BRIDGE (Existing NWMP Station)			
Sampling Point			Mogral Bridge
NWMP Station Code			2304
Latitude			12˚33’36.5”N
Longitude			74˚57’21.0”E
Date of Sampling			18.08.2020
Nature and flow of the river			Medium flow, water level rised
Sl.No	Parameters	Unit	Mogral Bridge
1	Temperature	˚C	27
2	pH	-	6.3
3	Conductivity	µmhos/cm	300
4	Turbidity	NTU	1.3
5	BOD	mg/l	1.3
6	Dissolved Oxygen	mg/l	7
7	Total Coliforms	cfu/100ml	250
8	Feacal Coliforms	cfu/100ml	80
9	Feacal Streptococcus	cfu/100ml	30
10	Chlorides	mg/l	70
11	Total Alkalinity	mg/l	45
12	Total Hardness	mg/l	50
13	Calcium Hardness	mg/l	30
14	Magnesium Hardness	mg/l	20
15	Calcium	mg/l	12
16	Magnesium	mg/l	4.9
17	Total Dissolved Solids	mg/l	169
18	Sodium	mg/l	38
19	Potassium	mg/l	7

MOGRAL RIVER - PUZHAKKARA (Proposed NWMP Station)			
Sampling Point			Puzhakkara
Distance from existing NWMP Station			3.25 km
Latitude			12˚33’58.1”N
Longitude			74˚58’43.7”E
Date of Sampling			18.08.2020
Nature and flow of the river			Water level rised, medium flow
Sl.No	Parameters	Unit	Puzhakkara
1	Temperature	˚C	28
2	pH	-	6.46
3	Conductivity	µmhos/cm	80
4	Turbidity	NTU	4.5
5	BOD	mg/l	1.1
6	Dissolved Oxygen	mg/l	7.7
7	Total Coliforms	cfu/100ml	120
8	Feacal Coliforms	cfu/100ml	60
9	Feacal Streptococcus	cfu/100ml	20
10	Chlorides	mg/l	15
11	Total Alkalinity	mg/l	18
12	Total Hardness	mg/l	20
13	Calcium Hardness	mg/l	11
14	Magnesium Hardness	mg/l	9
15	Calcium	mg/l	4.4
16	Magnesium	mg/l	2.2
17	Total Dissolved Solids	mg/l	46
18	Sodium	mg/l	8.8
19	Potassium	mg/l	0.7

Kerala State Pollution Control Board, DO Kasaragod			
ANALYSIS REPORT - AUGUST 2020			
Source of Sample		Drain joining Mogral river at Kadavath	Upstream of the same drain near Kottakkunnu
Date of Sampling		18.08.2020	18.08.2020
Latitude		12°33'36.5"N	12˚33'31.7" N
Longitude		74°57'29.6"E	74˚57'47.7" E
Distance from the river		114.07m	582.34m
Sl No.	Parameters	Sample 1	Sample 2
1	Temperaure,˚C	29	29
2	pH	5.96	5.69
3	Conductivity, µmhos/cm	373	129
4	Turbidity,NTU	3.4	1.3
5	BOD ,mg/L	2.5	0.3
6	Dissolved Oxygen ,mg/L	6.7	5.6
7	Chloride ,mg/L	93	27
8	Total Alkalinity ,mg/L	35	18
9	Total Hardness ,mg/L	49	21
10	Calcium Hardness ,mg/L	35	14
11	Magnesium Hardness ,mg/L	14	7
12	Calcium ,mg/L	1.4	5.6
13	Magnesium ,mg/L	3.4	1.7
14	Total Dissolved Solids ,mg/L	205	75
15	Total Coliforms , cfu/100ml	190	70
16	Feacal Coliforms, cfu/100ml	64	16
17	Feacal Streptococcus, , cfu/100ml	20	10
18	Sodium ,mg/L	53	15
19	Pottasium ,mg/L	6.8	2.5

Sd/-
Assistant Scientist

National Mission for Clean Ganga

Format for Submission of Monthly Progress Report by States/UTs

(Hon'ble NGT in the matter of OA No.673/2018 dated 06.12.2019)

RIVER PERUVAMBA, KANNUR

S. No.	Activity to be monitored	Timeline	Submission of progress by State/UT-Compliance status
1	Ensure 100% treatment of sewage at least in-situ remediation	31.03.2020	**1. Payyannur Municipality** 1. All houses have their own disposal facility 2. An STP is proposed at fish market Perumba **2. KunhimangalamGp** Ensured 100% treatment of sewage in – situ **3.Kankol- AlappadambaGp** Ensured 100% treatment of sewage in – situ **RamanthaliGp** Ensured 100% treatment of sewage in – situ
	Commencement of setting up of STPs and connecting all the drains and other sources of generation of sewage to	2021	Proposed 10 KLD STP at fish market Perumba by Payyannur Municipality

	the STPs must be ensured		which is under DPR stage
2	Timeline for completing all steps of action plans including completion of setting up STPs and their Commissioning	31.03.2022	
5	Chief Secretaries may set up appropriate monitoring mechanism at state level • Specifying accountability of nodal authorities not below the Secretary level • Chief Secretaries may have an accountable person attached in their office for this purpose	22.01.2020	
	• Monitoring at State level must take place	Fortnightly Commencing 21.12.2019	
6	Progress report may be furnished by the State/UTs to • Secretary,Ministry of Jal Shakti • Member Secretary,CPCB	Monthly (preferably before 20th of every month)	

6.1	Progress Report may be comprised of details along with completion timelines on: (I) Identification of polluting sources including drains contributing to river pollution and action as per NGT order on in-situ treatment. <u>(II)Status of STPs, I&D and sewerage networks</u> Details of Existing Infrastructure, Gap Analysis, Proposed along with completion timeline (II) <u>Status of CETPs</u> Details of Existing CETP and ETP Infrastructure,Gap Analysis, Proposed along with completion timeline, No. of industries and complying status (iv)<u>Status of Solid Waste Management & Details of Processing Facilities</u> Details of Existing Infrastructure,Gap Analysis, Proposed along with completion timeline (v) Latest water quality of polluted river, its tributaries, drains with flow details and ground water quality in the catchment of polluted river; (vi)Preventing dumping of waste and scientific waste	2020 Analysis is doing in every months	

	management including bio-medical waste, plastic waste and decentralizing waste processing, including waste generated from hotels, Ashrams, etc. (vii)Ground water regulation (viii) Adopting good irrigation practices (ix) Protection and management of food plain Zones (FPZ) (x) Rain water harvesting (xi)Maintaining minimum Environmental flow of river (xii) Plantation on both sides of the river (xiii)Setting up biodiversity parks on flood plains by removing encroachment	2020 2022	

ACTION PLAN FOR RIVER PERUVAMBA, KERALA

Action Plan of LocalBody							
No. (as per Action Plan)	Activity	Implementing agency	Time line	Progress in the month of July	Progress in the month of August	% works completed	Details of works remaining
A(b)	Sanitation Facility STP proposed at market place	Payyannur Muncipality	2021	Proposal for STP is in DPR stage	DPR STAGE	10%	DPR submitted for approval
C(ii)	Biodegradable waste disposal Bio bins (2061) Pit Compost (10992) Bio gas Plant (687)	Payyannur Muncipality	2022	-	Proposed project approved.	NA	Project Implementation in progress
C(ii)	Non biodegradable Waste Disposal MCF and RRF	Payyannur Muncipality	2022	completed	completed		MCF & RRF in function
E	Awareness Youth, Asha workers and other stake holders and Haritha sahayaSamithi	Payyannur Muncipality	Ongoing project	-		-	Detailed action plan attached
A(b)	Sanitation Facility Scientific Septic Tank and Soak pit	Kunhimangalam Panchayath	2019				

C(ii)	Biodegradable waste disposal Bio bins, Pit Compost, Bio gas Plant	Kunhimangalam Panchayath	Every year project	For Disposal Of Biodegradable Waste From Source, Facilities Like Pipe Compost, Waste Pit, Ring Compost Etc Are Provided In Annual Plan And Nregs			
C(ii)	Non biodegradable Waste Disposal MCF	Kunhimangalam Panchayath	Ongoing project	Completed the work of MCF			
E	Awareness Youth, Asha workers and other stake holders	Kunhimangalam Panchayath	Once in a month				
E	Side wall protection of drains	Kunhimangalam Panchayath	12/2019	Completed			
E	Installation of CCTV camerasat major points	Kankol – Alappadamba GP	2019	For Disposal Of Biodegradable Waste From Source, Facilities Like			

				Pipe Compost, Waste Pit, Ring Compost Etc Are Provided In Annual Plan And Nregs			
C(ii)	Biodegradable waste disposal Bio bins, Pit Compost, Bio gas Plant (2460 Nos)	Kankol – Alappadamba GP	Ongoing	Completed the implementation		100%	NA
C(ii)	Non Biodegradable waste disposal MCF	Kankol – Alappadamba GP	Ongoing	Completed	No updation received for this month		
E	Awareness Youth, Asha workers and other stake holders	Kankol – Alappadamba GP	Once in a month		No updation received for this month		
A(b)	Sanitation Facility No markets and houses on the bank	Ramanthali GP		Available	Available	40%	
C(ii)	Non Biodegradable waste disposal MCF and sending to RRF	Ramanthali GP	2020				
E	Drain Cleaning and Side protection	Ramanthali GP	2022	There are 5 natural drains meeting the river, of which 3 drains cleaned	No updated	50%	

				before monsoon itself and two are partly cleaned and the cleaning work is stopped due to heavy rain			
E	Awareness Youth, Asha workers and other stake holders	Ramanthali GP	2022				
C(ii)	Bio degradable waste disposal Ring Compost – 1000 Nos Compost Pit – 2000 Nos Biogas Plant – 100 Nos	Ramanthali GP	2022	ongoing	ongoing		

Action Plan by Irrigation Department

No. (as per Action Plan)	Activity	Implementing agency	Time line	Progress in the month of July	Progress in the month of August	% works completed	Details of works remaining
E	Providing fencing on Perumbabridge (NH) across Perumbariver at Payyannur in Payyannur Municipality	Irrigation department	2021	DPR stage	No report received for this month		
E	Desilting and reconstruction of salt water exclusion cross bar across perumbathodu in Payyannur	Irrigation Department	2021	DPR stage			

	Municipality MI Class II Plan fund						
E	Desilting and repair of salt water exclusion cross bar across Koykottuvayal thodu inKunhimangalam Panchayath State Disaster Response Fund	Irrigation Department	2020	DPR stage			
E	Regulating activities in flood plain zone, protection and management of flood plain zone Protection and management of flood plain zone for a period of 3 years with a fund of 0.50 crores	Irrigation Department	3 years	DPR stage			
E	Greenery development-Plantation plan. Plantation on both sides of the river, setting up biodiversity parks on flood plains by removing encroachment Planting trees on the bank of the river will be	Irrigation Department	3 years	DPR stage			

	completed within 3 years from the commencement of works with a fund of 0.40 crores						
E	Issues relating to E-flow, maintaining minimum environmental flow of river(by having watershed management provisions) By Micro watershed managemen t for a period of 2 years with a fund of 0.25 Crore from the available fund	Irrigation Department	2 years				
Combined Action by KSPCB							
No. (as per Action Plan)	Activity	Implementing agency	Time line	Progress in the month of July	Progress in the month of August	% works completed	Details of works remaining
1	Sanitation Providing of toilets to residences With treatment and disposal system for sewage and sullage	Local body					

2	Community Toilet Proposed construction of newcommunity Toilet at satellite points on the bank of river	All local bodies, SuchitwaMission, Revenue department					
3	Rain water recharge Entry of rain water and rain water recharging to all thodu and drain	All local bodies, Kerala Water Authority,					
4	Solid waste management Check they have Board's consent and sanitation facilityis provided.	PollutionControlBoard, Health authority		Regular monitoring is conducting for verification of compliance			
5	Household waste Adequate number of Kitchen bins shall beprovided	Municipalities and local bodies					
6	Market Providing proper waste handling facility for wastewater		Six months				

	And solid wastes		30				
7	Rendering plant Rendering plant forpoultry wastes	Local body	Six months				
8	Slaughter house Slaughter house waste disposal facility	Local body					
9	Establishment like service station and workshops Strict monitoringof disposal of waste(sewage, sullage,degradable waste, non-biodegradablewaste) surveyed area and alsoin the catchment of theriver i)VerifyWhether consent tooperate of the Board exists	PollutionControlBoard	Six months	Regular monitoring is conducting for verification of compliance and industry survey is carrying out using ENVICLEAN app.			
10	Sanitation survey should be done Sanitation survey is to be conductedfor 100m on eithersidesof the other parts of polluted stretch if anylocatednearby	PollutionControlBoard	Six months				
11	Awareness Awareness for residence association	Suchitwa Mission/ LSGD/Corporation	Once in a month				

ACTION BY GROUND WATER DEPARTMENT

Sl. No.	Ref para item nos as per NGT Order no.673/2018 dated 20.09.2018	Activity	Progress in the month of July	Progress in the month of August	% works completed	Details of works remaining
1	B(i)	Ground Water resources and regulation of ground water extraction by industries particularly in over exploited as critical zones/blocks (Earlier Status : As per Groundwater resources of Kerala, 2017 estimate a total number of 2 blocks (Neeleswaram and Payyannur) comes under the Peruvamba river basin. All the blocks in the river stretch are safe with stage of groundwater extraction ranges from 34.85% to 69.52%)	No report received.			
2	B(ii)	Ground water recharging / rain water harvesting (Earlier Status : The average pre -monsoon groundwater level ranges from7.97mbgl - 8.81 mbgl. Department has implemented 5 no of bore well recharge structures and 3 dug well recharge at Cheemeni open prison in Neeleswaram block)				
3	B(iii)	Periodic ground waste quality assessment and remedial actions in case of contaminated ground water tube wells/bore wells or hand pumps				

		(Earlier Status : Groundwater Department has 1 observation dug well and 1 piezometer for routine studies in the river stretch.)				
4	B(iv)	For regulating use of ground water for irrigation purpose, adopting good irrigation practices (Earlier status :The total irrigation draft in the area ranges from 695.64 - 1326.85 ha.m.)				

Other than these following are some more suggestions from the part of pollution controlBoard.

1. Proper awareness among the inhabitants in the area is to be given for protecting the water bodies. Basic training for the people at the grass root level is to be provided for river management. All efforts for maintaining the quality of water bodies may be done by the Panchayat/Municipal authoritiesonly with people'sparticipation.
2. The nearby gramapanchayath and municipalities are mainly responsible for not providing municipal waste collection and treatment facilities in the locality. So they must be instructed to provide the required facility for scientific disposal of municipal solid waste as per the MSW rules 2016. The citizens as well as the municipal/gramapanchayath authorities need to be aware of the importance of scientific disposal of waste generated. Their attitude towards handling waste has to be changed. Reducing waste, recovering recyclable materials, return of nutrients to the eco system as well as generation of energy from waste are to be practised. There has to be a valid scheme for collection, segregation, transportation, processing and safe disposal of waste by the authorities. For this affordable and viable waste to energy conversion technologies apart from conventional composting is to be implemented by the municipalities seeking technicalexpertise.
3. Propagation of vegetative cover in water shed will reduce soil erosion and enhance percolation of rain water into the sub surface.In downstream stretches where the river is saline, propagation of mangroves areessential.
4. Strict monitoring from the part of implementing as well as monitoring agencies is required for effective functioning of waste treatment facilities in waste generatingunits.
5. The practice of waste dumping into the river is to be prevented legally and strict action against this practice is to be adopted at

panchayath and municipalitylevel.

6. Re-survey of the river boundaries throughout the entire stretch is to be done urgently so as to prevent encroachment of the river.
7. The municipalities as well as the panchayaths are to be directed to provide proper waste management facilities of their own. All towns and cities must have Sewage Treatment Plants (STPs) that clean up the sewage. Facility for collection, segregation, transport, processing and scientific disposal of waste generated are to be provided by the local authorities in strict adherence to the Municipal Solid Waste Management Rules, 2016. For this, affordable and viable waste to energy conservation technologies apart from conventional composting is to be implemented seeking technicalexpertise.
8. Strict monitoring from the part of implementing as well as monitoring agencies is required for effective functioning of waste treatment facilities in waste generating units. The riverine stretches are to be monitored periodically at identified locations for water qualityassessment.
9. Modern agricultural practices and technologies introduce the use of inorganic fertilizers with Nitrogen, Phosphorous, Potash and inorganic pesticides in farm lands and play importantroleintheriverpollution.Thesemayconcentrateintothewaterbodythroughrun off causing algal blooms by which whole stretch of water become choked. Fertilizers and chemicals application in agricultural lands are to be strictly under technical expertise.
10. Rain water recharging measures must beadopted.
11. Eco tourism and water tourism projects are to be designed giving due importance for protecting the environment. The activities are to be organized in such ways which do not induce any types of pollution to the water body. Strict monitoring from the concerned authorities are recommended in functioning of the tourismprojects.
12. Implement Green Protocol effectively in local self governments. Prohibit littering of plastics in the area. Plastic wastes shall be handled as per the provisions of Plastic Waste (Management and Handling) Rules,2018.
13. The existing waste water treatment facilities of Taliparamba Municipality shall be augmented in such a way so as to operate round theyear.
14. Actions shall be taken by the local bodies to clean the storm water drains. Rejuvenation of small streams, creeks leading into the river is to bedone.
15. Round the clock patrolling shall be provided so as to prevent waste dumping on public places.

16. CCTV can be installed at suitable points in order to identify the persons/ establishments dumping waste in to river. All the local bodies must establish slaughter houses with modern facilities and unauthorized slaughter houses shall be strictlyenforced.
17. Strict action shall be taken against non-violating person/ agency by the authorities when noticed.Plantation of trees and plants on the bank will be highly effective in controlling the wastedisposal.

2. PERUVAMBA

Sl no	Parameters	Kacherikadavu	Mathamangalam	Chandapura	Kandakali
	Date of collection	**4/9/2020**	**4/09/2020**	**06/08/2020**	**4/09/2020**
1	pH	7.63	7.72	6.27	8.01
2	Electrical Conductivity, µs/cm	40.1	69.1	38.4	1191
3	BOD, mg/L	0.7	0.9	0.4	2.2
4	Dissolved Oxygen, mg/L	6.0	7.5	6.93	6
5	Total coliform, cfu/100ml	120	140	180	300
6	Fecal coliform, cfu/100ml	80	80	40	140
7	Turbidity	0.7	0.9	1.4	1.5
8	Total Hardness, mg/L	15	10	14	48
9	Calcium Hardness, mg/L	9	3	6	13
10	Magnesium Hardness, mg/L	6	7	8	35
11	Ammonia-NO_3, mg/L	BDL	BDL	BDL	0.018
12	Sulphate, mg/L	1.204	BDL	BDL	0.133
13	Phosphate, mg/L	BDL	BDL	BDL	BDL
14	Fluoride, mg/L	BDL	BDL	0.20	0.007
15	Total Alkalinity, mg/L	10	9	6	26
16	Chloride, mg/L	16	12	11	56

National Mission for Clean Ganga

Format for Submission of Monthly Progress Report by States/UTs
(Hon'ble NGT in the matter of OA No.673/2018 dated 06.12.2019)
RIVER RAMAPURAM, KANNUR

S. No.	Activity to be monitored	Timeline	Submission of progress by State/UT- Compliance status
1	Ensure 100% treatment of sewage at least in-situ remediation	31.03.2022	Proposed by Madayi GP Scientific Septic Tank and Soak pit (Around 20 Nos), Project got approval
	Commencement of setting up of STPs and connecting all the drains and other sources of generation of sewage to the STPs must be ensured	31.03.2022	NIL
2	Timeline for completing all steps of action plans including completion of setting up STPs and their Commissioning	31.03.2022	
5	Chief Secretaries may set up appropriate monitoring mechanism at state level • Specifying accountability of nodal authorities not below the Secretary level • Chief Secretaries may have an accountable person attached in their office for this purpose	22.01.2020 22.01.2020	
	• Monitoring at State level must take place	Fortnightly Commencing	

		21.12.2019	
6	Progress report may be furnished by the State/UTs to • Secretary,Ministry of Jal Shakti • Member Secretary,CPCB	Monthly (preferably before 20th of every month)	

6.1	Progress Report may be comprised of details along with completion timelines on: (I) Identification of polluting sources including drains contributing to river pollution and action as per NGT order on in-situ treatment. (II) <u>Status of STPs, I&D and sewerage networks</u> Details of Existing Infrastructure,Gap Analysis, Proposed along with completion timeline (III) <u>Status of CETPs</u> Details of Existing CETP and ETP Infrastructure,Gap Analysis, Proposed along with completion timeline, No. of industries and complying status (iv) <u>Status of Solid Waste Management & Details of Processing Facilities</u> Details of Existing Infrastructure,Gap Analysis, Proposed along with completion timeline (v) Latest water quality of polluted river, its tributaries, drains with flow details and ground water quality in the catchment of polluted river; (vi) Preventing dumping of waste and scientific waste management including bio-medical waste, plastic waste and decentralizing waste processing, including waste generated from hotels, Ashrams, etc.	2019 2021 Analysis is doing in every month 2021	

	(vii)Ground water regulation (viii) Adopting good irrigation practices (ix) Protection and management of food plain Zones (FPZ) (x) Rain water harvesting	1. Proposal given by Irrigation Department for Providing fencing on Ramapurambridge across Ramapuramri ver at Madayi GP 2. Proposal given by Irrigation Department for Desilting and repair of salt water exclusion cross bar at Ramapuram in cheruthazham GP 3. Regualting activites in flood plain zone, protection and management of flood plain zone	

	(xi)Maintaining minimum Environmental flow of river (xii) Plantation on both sides of the river (xiii)Setting up biodiversity parks on flood plains by removing encroachment	maintaining enviornmental flow of Ramapuram River from the d/s of Ramapuram SWECB in Cheruthazham Panchayath	

ACTION PLAN FOR RIVER RAMAPURAM, KERALA

Ref para no:48 as per NGT order 673/2018 dated:20.09.2018	Activity	Implementing Agency	Time	Progress in the month of July	Progress in the month of August	% works completed	Details of works remaining
A (b)	Sanitation Facility	Pariyaram GP	03/2020	Panchayath informed that a small portion of the river is flowing through the boarder of Panchayath .			
C (ii)	Biodegradablewaste disposal	Pariyaram GP	03/2022				
C (ii)	Non bio degradable Waste Disposal	Pariyaram GP	On going project				
E	Awareness	Youth, Asha workers and other stake holders	Whenever necessary				
A (b)	Identification of illegal outlets in to drains and stoppage of the same	Madayi GP	09/2019	Ongoing – Estimate prepared for constructing 20 numbers of soak pit.	12 Numbers of Soak pit completed	70%	Not Updated
A (b)	Sanitation Facility	Madayi GP	2022	Order placed for 100 Numbers of Ring Compost to be issued to the 20 wards for bio	Order placed for 100 Number of Ring Compost to be issued to the 20 wards		Not Updated

				degradable waste disposal, proposal for thumboormo zhi is temporarly postponed due to non availability of land	still not supplied due to corona issues.		
C (ii)	Biodegradablewas te disposal	Ward Sanitation Committee ofLocal Body	2022	Completed the work of MCF but not started functioning due to complaint from local people			Not Updat ed
E	Awareness	Youth, Asha workers and other stake holders	On going				

Action plan of Local body

1. **Public Toilet**: Construct public toilets using available funds on the bank of river near Tourist places, Fishing spotsetc.

2. **Mini MCF:** Construct material collection facility in miniature form at suitable intervals on the bank of the river in order to prevent dumping of wastes in towater.

3. **Toilet at houses:**Construct toilets with scientific septic tank and Soakpit

4. **Retro Fitting:**Maintenance work of existing toilets of residences near the bank of river using performance incentivegrant.

5. **Bio degradable waste Disposal:**Distribution of Bio gas Plant, Composting facility to residences near river for bio degradable

wastedisposal.

6. **Common Waste disposal facility:**For the disposal of bio degradable waste disposal at market places, provide community level bio gas plants, Thumboormozhi etc. Using suitablefunds

7. **Common Sewage treatment facility:**Provide common sewage treatment facility for waste water generating from market places and disposing in to publicdrains.

8. **Septage treatment facility :**Construct septage treatmentfacility

In addition to above, CCTV can be installed at suitable points in order to identify the persons/ establishments dumping waste in to river. All the local bodies must establish slaughter houses with modern facilities and unauthorized slaughter houses shall be strictly enforced.

Strict action shall be taken against non-violating person/ agency by the authorities when noticed. Plantation of trees and plants on the bank will be highly effective in controlling the wastedisposal.

Action Plan by Irrigation Department

Ref para no:48 as per NGT order 673/18 dated: 20. 9.18	Activity	Implementing Agency	Time for completion	Progress in the month of July	Progress in the month of August	% works completed	Details of works remaining
C (ii)	Providing fencing on Ramapurambr idge across Ramapuramri ver at Madayi GP	Irrigation department	2021				
E	Desilting and repair of salt water exclusion cross bar at Ramapuram in cheruthazham GP	Irrigation Department	2020	DPR Submited for FS to CE (I&A) Tvpm dt.7.11.19 (2) vide Lr. No.D5-1429 Reju/19.	No report received		
E	Regualting activites in flood plain zone, protection and management of flood plain zone	Irrigation Department	-3 years	-		-	
E	Greenery development-Plantation plan. Plantation on both sides of the river, setting up biodiversity parks on flood plains by removing encroachment	Irrigation Department	2 years				
E	Issues relating to E-flow, maintaining minimum environmental flow of river(by having watershed management provisions)	Irrigation Department	2 years				

Combined ActionPlan

	Proposed action	Agency	Timeline	Progress in the month of July	Progress in the month of August	% works completed	Details of works remaining
A (b)	Providetoilets to residences with treatment and disposal system for sewage and sullage	Local Body	As there are residences with single pit toilet				
A (b)	Construction of new community toilets with treatment system	All local bodies SuchitwaMission, Revenue department	Proposed Construction Of new community Toilet at satellite points on the bank ofriver				
B (ii)	Entry of rain water and rain water recharging to all channels and drain	All local bodies , Kerala Water Authority,	Drains are inspected before rain and all channels and stream are cleaned once in a year				
C (ii)	Sanitary waste in hostels, establishments should be segregated, treated and disposed as per Solid Wastes Management Rules,2016 intheir respective wards.Aerocompostimg and Material Collection Facility should be given in all wards near the river bank.	Pollution Control Board ,Health departmen t	Check they have board consent and sanitation facility is provided	Regular monitoring is conducting for the verification of compliance of waste managemen t			
C (ii)	Adequate number of kitchen bins shall beprovided	Municipalities and local bodies	Six months				

C (ii)	Providing proper waste handling facility. For wastewater and solid wastes		Six months				
C (ii)	Rendering plant for poultry wastes	Local body	Six months				
C (ii)	Slaughter house waste disposal facility	Local body					
A (iv)	Strict monitoring of disposal of waste(sewage, sullage, degradable waste, non-biodegradable waste) surveyed area and also in the catchment of theriver i)Verify Whether consent to operate of the Board exists	Pollution Control Board	Six months				
A (b)	Sanitation survey is to be conducted for 100m on either sides of the other parts of polluted stretch if any located nearby	Pollution Control Board	Six months				
E	Awareness for residence association:	Suchitwamission/LSGD/Corporation	Once in a month				

Action Plan by Ground WaterDepartment – No reports received

Sl.No	Ref para no:48 as per NGT order 673/2018 dated:20. 09.2018	Activity	Progress in the month of July	Progress in the month of August	% works completed	Details of works remaining
1	B(i)	Ground Water resources and regulation of ground water extraction by industries particularly in over expolited as critical zones/blocks				
2	B(ii)	Ground water recharging / rain water harvesting				
3	B(iii)	Periodic ground waste quality assessment and remedial actions in case of con taminated ground water tube wells/bore wells or hand pumps				
4	B(iv)	For regulating use of ground water for irrigation purpose, adopting good irrigation practices				

3. RAMAPURAM

o	Parameters	Kappugal	Athiyadam	Ramapuram	Vayalapra
	Date of collection	**21/08/2020**	**21/08/2020**	**6/08/2020**	**21/08/2020**
1	pH	6.54	6.83	6.46	6.75
2	Electrical Conductivity, µs/cm	45.5	42	578	972
3	BOD, mg/L	2.1	1.9	0.4	1.9
4	Dissolved Oxygen, mg/L	5.4	5.6	5.07	4.4
5	Total coliform, cfu/100ml	180	140	310	310
6	Fecal coliform, cfu/100ml	120	90	80	180
7	Turbidity	0.6	0.8	0.8	1.0
9	Total Hardness, mg/L	5	7	110	56
8	Calcium Hardness, mg/L	1	3	90	32
10	Magnesium Hardness, mg/L	4	4	20	24
11	Ammonia-NO_3, mg/L	BDL	BDL	0.015	BDL
12	Sulphate, mg/L	BDL	BDL	4.21	BDL
13	Phosphate, mg/L	BDL	BDL	BDL	BDL
14	Fluoride, mg/L	BDL	0.186	BDL	BDL
15	Total Alkalinity, mg/L	8	9	56	21
16	Chloride, mg/L	7	4	160	66

National Mission for Clean Ganga

Format for Submission of Monthly Progress Report by States/UTs
(Hon'ble NGT in the matter of OA No.673/2018 dated 06.12.2019)
RIVER KAVVAYI, KANNUR

S. No.	Activity to be monitored	Timeline	Submission of progress by State/UT-Compliance status
1	Ensure 100% treatment of sewage at least in-situ remediation	No time limit given	1. Payyannur Municipality: Completed the work of Scientific Septic Tank and Soak pit (10 Nos)
			2. Kankol- Alappadamba Grama Panchayath All houses and establishments have their own disposal facility
			3. Ramanthali Grama Panchayath All houses and establishments have their own disposal facility
	Commencement of setting up of STPs and connecting all the drains and other sources of generation of sewage to the STPs must be ensured	2021	DPR submitted for approval of the STP Proposal by Payyannur Municipality at Fish market Perumba
2	Timeline for completing all steps of action plans including completion of setting up STPs and their Commissioning	31.03.2022	Some of the works in action plan is completed already and some are ongoing as informed by local bodies
5	Chief Secretaries may set up appropriate monitoring mechanism at state level • Specifying accountability of nodal authorities not below the Secretary level • Chief Secretaries may have an accountable person attached in their office for this purpose		
	• Monitoring at State level must take place		

6	Progress report may be furnished by the State/UTs to • Secretary, Ministry of Jal Shakti • Member Secretary, CPCB		

6.1	Progress Report may be comprised of details along with completion timelines on: (I) Identification of polluting sources including drains contributing to river pollution and action as per NGT order on in-situ treatment. (II) Status of STPs, I&D and sewerage networks Details of Existing Infrastructure, Gap Analysis, Proposed along with completion timeline (III) Status of CETPs Details of Existing CETP and ETP Infrastructure, Gap Analysis, Proposed along with completion timeline, No. of industries and complying status (iv)Status of Solid Waste Management & Details of Processing Facilities Details of Existing Infrastructure, Gap Analysis, Proposed along with completion timeline (v) Latest water quality of polluted river, its tributaries, drains with flow details and ground water quality in the catchment of polluted river; (vi)Preventing dumping of waste and scientific waste management including bio-medical waste, plastic waste and decentralizing waste processing, including waste generated from hotels, Ashrams, etc. (vii)Ground water regulation (viii) Adopting good irrigation practices (ix) Protection and management of food plain Zones (FPZ) (x) Rain water harvesting (xi)Maintaining minimum Environmental flow of river (xii) Plantation on both sides of the river	2020 Analysis is doing in every months 2022	

	(xiii) Setting up biodiversity parks on flood plains by removing encroachment		

ACTION PLAN FOR RIVER KAVVAI, KERALA

Action Plan of LocalBody							
No. (as per Action Plan)	Activity	Implementing agency	Time line	Progress in the month of July 2020	Progress in the month of August 2020	% works completed	Details of works remaining
A (b)	Sanitation Facility Septage treatment facility shall be provided by Local Bodies in various places.	Payyannur municipality	2021	Proposal for STP is in DPR stage	DPR STAGE	10%	DPR submitted for approval
C(ii)	Biodegradable waste disposal Bio bins (2061) Pit Compost (10992) Bio gas Plant (687)	Payyannur Muncipality	2022	-	Proposed project approved.	NA	Project Implementation in progress
A(b)	Non biodegradable Waste DisposalMCF and RRF	1. Payyannur Muncipality	2022	completed	completed		MCF & RRF in function
E	Awareness Youth, Asha workers and other stake holders and Haritha sahaya	Payyannur Muncipality	Ongoing project	-		-	Detailed action plan attached

	Samithi						
E	Installation of CCTV cameras at major points	Kankol	2019	Not started installation due to non-availability of fund	No updation received for this month		
C(ii)	Biodegradable waste disposal Bio bins, Pit Compost, Bio gas Plant(2460 Nos)	Kankol	Ongoing	Completed the implementation		100%	NA
A(b)	Non biodegradable Waste Disposal MCF	Kankol	Ongoing project	Completed	No updation received for this month		
E	Awareness Youth, Asha workers and other stake holders	Kankol	Once in a month		No updation received for this month		
A (b)	Sanitation Facility in markets	Ramanthali GP	2020	Available	Available	40%	
A(b)	Non Biodegradable waste disposal MCF	Ramanthali GP	2020	Completed	(Proposed 5 more mini MCFs)		
A (b)	Drain Cleaning and side protection	Ramanthali GP	2022	There are 5 natural drains meeting the river, of which 3 drains cleaned before monsoon itself and two are partly cleaned and the cleaning work is stopped due to heavy rain	No updated	50%	
E	Renovation of Ponds & Construction of Platform to	Thrikkaripur - CWRDM	2019	**NOT UNDER DO KANNUR**			

	openwell (Implementation of Map of Kavvayi Wetland system of Northern Kerala)						
Action Plan by Irrigation Department							
No. (as per Action Plan)	Activity	Implementing agency	Time line	Progress in the month of July 2020	Progress in the month of August 2020	% works completed	Details of works remaining
E	Desilting and rejuvenation of NarangaThodu in Payyannur Municipality	Irrigation Department	2020	DPR Submitted for FS to CE (I&A) Tvpm dt.7.11.19 vide Lr. No.D5-1429 Reju/19. (1)	No update received		

1. Proper awareness among the inhabitants in the area is to be given for protecting the water bodies. Basic training for the people at the grass root level is to be provided for river management. All efforts for maintaining the quality of water bodies may be done by the Panchayat/Municipal authorities only with people'sparticipation.
2. The nearby gramapanchayath and municipalities are mainly responsible for not providing municipal waste collection and treatment facilities in the locality. So they must be instructed to provide the required facility for scientific disposal of municipal solid waste as per the MSW rules 2016. The citizens as well as the municipal/gramapanchayath authorities need to be aware of the importance of scientific disposal of waste generated. Their attitude towards handling waste has to be changed. Reducing waste, recovering recyclable materials, return of nutrients to the eco system as well as generation of energy from waste are to be practised. There has to be a valid scheme for collection, segregation, transportation, processing and safe disposal of waste by the authorities. For this affordable and viable waste to energy conversion technologies

apart from conventional composting is to be implemented by the municipalities seeking technicalexpertise.

3. Propagation of vegetative cover in water shed will reduce soil erosion and enhance percolation of rain water into the sub surface.In downstream stretches where the river is saline, propagation of mangroves areessential.

4. Strict monitoring from the part of implementing as well as monitoring agencies is required for effective functioning of waste treatment facilities in waste generatingunits.

5. The practice of waste dumping into the river is to be prevented legally and strict action against this practice is to be adopted at panchayath and municipalitylevel.

6. Re-survey of the river boundaries throughout the entire stretch is to be done urgently so as to prevent encroachment of theriver.

7. The municipalities as well as the panchayaths are to be directed to provide proper waste management facilities of their own. All towns and cities must have Sewage Treatment Plants (STPs) that clean up the sewage. Facility for collection, segregation, transport, processing and scientific disposal of waste generated are to be provided by the local authorities in strict adherence to the Municipal Solid Waste Management Rules, 2016. For this, affordable and viable waste to energy conservation technologies apart from conventional composting is to be implemented seeking technicalexpertise.

8. Strict monitoring from the part of implementing as well as monitoring agencies is required for effective functioning of waste treatment facilities in waste generating units. The riverine stretches are to be monitored periodically at identified locations for water qualityassessment.

9. Modern agricultural practices and technologies introduce the use of inorganic fertilizers with Nitrogen, Phosphorous, Potash and inorganic pesticides in farm lands and play important role in the river pollution. These may concentrate into the water body through run off causing algal blooms by which whole stretch of water become choked. Fertilizers and chemicals application in agricultural lands are to be strictly under technicalexpertise.

10. Rain water recharging measures must beadopted.

11. Eco tourism and water tourism projects are to be designed giving due importance for protecting the environment. The activities are to be organized in such ways which do not induce any types of pollution to the water body. Strict monitoring from the concerned authorities are recommended in functioning of the tourismprojects.

12. Implement Green Protocol effectively in local self-governments. Prohibit littering of plastics in the area. Plastic wastes shall be handled as per the provisions of Plastic Waste (Management and Handling) Rules,2018.

13. The existing waste water treatment facilities of Taliparamba Municipality shall be augmented in such a way so as to operate round theyear.

14. Actions shall be taken by the local bodies to clean the storm water drains. Rejuvenation of small streams, creeks leading into the river is to bedone.

15. Round the clock patrolling shall be provided so as to prevent waste dumping on publicplaces.

1. Kavvayi River

Table 1 Concentrations of water quality parameters measured on August 2020

Sl no	Parameters	Kankol	Karikuzhi thodu	Thattarakadavu Bridge	Kuttyol palam
	Date of collection	**27/08/2020**	**27/08/2020**	**27/08/2020**	**06/08/2020**
1	pH	7.35	7.59	7.38	6.77
2	Electrical Conductivity, µs/cm	37.8	38.9	443	49.7
3	BOD, mg/L	0.9	0.3	2.3	0.6
4	Dissolved Oxygen, mg/L	7.4	7.2	7.6	6.53
5	Total coliform, cfu/100ml	180	180	300	240
6	Faecal coliform, cfu/100ml	40	80	120	80
7	Turbidity	0.8	0.9	1	1.1
8	Total Hardness, mg/L	17	22	80	15
10	Calcium Hardness, mg/L	7	10	40	7
9	Magnesium Hardness, mg/L	10	12	40	8
11	Ammonia-NO_3 ,mg/L	0.010	BDL	BDL	0.0066
12	Sulphate, mg/L	0.0018	BDL	BDL	0.021
13	Phosphate, mg/L	BDL	BDL	BDL	BDL
14	Fluoride, mg/L	BDL	BDL	BDL	BDL
15	Total Alkalinity, mg/L	5	14	15	10
16	Chloride, mg/L	9	7	43	16

9.9.2020

Assistant Scientist
Kerala State Pollution Control Board
District Office, Kannur-670002

16/9/20

National Mission for Clean Ganga

Format for Submission of Monthly Progress Report by States/UTs

(Hon'ble NGT in the matter of OA No.673/2018 dated 06.12.2019)

RIVER KUPPAM, KANNUR

S. No.	Activity to be monitored	Timeline	Submission of progress by State/UT- Compliance status
1	Ensure 100% treatment of sewage at least in-situ remediation		1. UDAYAGIRI GP: 62 Nos. soak pit completed, 10 Nos ongoing 2. CHAPPARAPPADAVU GP: 3. MADAYI GP: Ongoing –Estimate prepared for constructing Nine numbers of soak pit. 4. THALIPPARAMBA MUNICIPALITY: All houses and establishments have their own disposal facilities 5. PATTUVAM GP: All the Houses, Shops and institutions are directed to treat their solid liquid waste at the source itself 6. PARIYARAM GP: Completed the work of 10 Nos of soak pit
	Commencement of setting up of STPs and connecting all		

	the drains and other sources of generation of sewage to the STPs must be ensured		
2	Timeline for completing all steps of action plans including completion of setting up STPs and their Commissioning	31.03.2021	
5	Chief Secretaries may set up appropriate monitoring mechanism at state level • Specifying accountability of nodal authorities not below the Secretary level • Chief Secretaries may have an accountable person attached in their office for this purpose		
	• Monitoring at State level must take place		
6	Progress report may be furnished by the State/UTs to • Secretary,Ministry of Jal Shakti • Member Secretary,CPCB	Monthly (preferably before 20th of every month)	

6.1	Progress Report may be comprised of details along with completion timelines on: (I) Identification of polluting sources including drains contributing to river pollution and action as per NGT order on in-situ treatment. (II) <u>Status of STPs, I&D and sewerage networks</u> Details of Existing Infrastructure,Gap Analysis, Proposed along with completion timeline (III) <u>Status of CETPs</u> Details of Existing CETP and ETP Infrastructure,Gap Analysis, Proposed along with completion timeline, No. of industries and complying status (iv) <u>Status of Solid Waste Management & Details of Processing Facilities</u> Details of Existing Infrastructure,Gap Analysis, Proposed along with completion timeline (v) Latest water quality of polluted river, its tributaries, drains with flow details and ground water quality in the catchment of polluted river; (vi) Preventing dumping of waste and scientific waste management including bio-medical waste, plastic waste and decentralizing waste processing, including waste generated from hotels, Ashrams, etc.	Analysis is doing in every months 2020	

	(vii)Ground water regulation (viii) Adopting good irrigation practices (ix) Protection and management of food plain Zones (FPZ) (x) Rain water harvesting (xi)Maintaining minimum Environmental flow of river (xii) Plantation on both sides of the river (xiii)Setting up biodiversity parks on flood plains by removing encroachment	2022	

ACTION PLAN FOR RIVER KUPPAM, KERALA

Ref para no:48 as per NGT order 673/2018 dated:20.09.2018	Activity	Implementing Agency	Time	Progress in the month of July	Progress in the month of August	% works completed	Details of works remaining
Udayagiri GP							
A (b)	Sanitation Facility	Udayagiri GP	03/2020	62 Nos. completed, 10 Nos ongoing in the proposed Scientific Septic Tank (Approx.100 Nos)	80 Nos. completed, 10 Nos ongoing in the proposed Scientific Septic Tank (Approx.100 Nos)	80%	Not Updated
C (ii)	Biodegradablewaste disposal	Udayagiri GP	Ongoing project	Total distribution of Compost Pit – 74 Nos, Biogas Plant – 20 Nos	Total distribution of Compost Pit – 90 Nos, Biogas Plant – 25 Nos	80%	Not Updated
C (ii)	Non bio degradable Waste Disposal	Clean kerala Company	Ongoing project	Completed the work of MCF	MCF is functional	100 %	
E	Awareness	Youth, Asha workers and other stake holders	Ongoing project	-	Was Conducting in ward base before the prevailing situation of covid –19		Ongoing
Chapparappadavu GP							
A (b)	Sanitation Facility	Chapparappadavu GP	06/2019				Not Updated
C (ii)	bio degradable Waste Disposal	Ward Sanitation Committee ofLocal Body	12/2019	Biogas plants- 46 Nos, Pipe compost-	Issued 154 pit compost		Ongoing

				850Nos, Ring compost 81 Nos			
C (ii)	Non bio degradable Waste Disposal	Local body (Haritha Karma Sena)	03/2020	Completed and started functioning of MCF		100 %	NA
E	Awareness	Youth, Asha workers and other stake holders	03/2020 (Will extend if necessary)		Was Conducting in ward base before the prevailing situation of covid –19		
Pariyaram Panchayat							
A (b)	Sanitation Facility	Pariyaram Panchayat	03/2020	Completed the work of 10 Nos of Toilets	Completedthe work of 63 Nos of toilets.		
C (ii)	Biodegradablewaste disposal		03/2022	Ring compost, Pipe Compost, Dung Pits (8012 Nos), Due to non availability of land proposal for thomboor mozhi is reduced to one, which is submitted for TS	Ring compost-550, Pipe Compost-2500, Bokashi – 10 (for establishments) ,Bio bins -92, Dung Pits-207, Biogas plant -3 , portable biogas plant -33 Proposal for Thumboor Mozhi is for	80%	The number of issued facilities given in the month of July was not correct as informed by Panchayat Secretary and the correct details are furnished in August

					consideration of TS by Suchitwamision		
C (ii)	Non bio degradable Waste Disposal	Pariyaram Panchayat	On going project	Door to door collection of non bio degradable waste is collected through Harithakarmasena and giving to the registered agencies	Door to door collection of non bio degradable waste is collected through Harithakarmasena and giving to the registered agencies	NA	Ongoing
E	Awareness	Youth, Asha workers and other stake holders	Whenever necessary				
A (b)	Identification of illegal outlets in to drains and stoppage of the same	Pariyaram Panchayat	09/2019		soak pit-3Completed	100 %	NA
Madayi GP							
A (b)	Sanitation Facility	Local Body	2022	Ongoing – Estimate prepared for constructing 20 numbers of soak pit.	12 Numbers of Soak pit completed	70%	Not Updated
C (ii)	Biodegradablewaste disposal	Ward Sanitation Committee of Local body	Bio bins, pit compost -2022 Thumpoormuzh = 2020	Order placed for 100 Numbers of Ring Compost to be issued to	Order placed for 100 Number of Ring Compost to be issued to the 20		Not Updated

				the 20 wards for bio degradable waste disposal, proposal for thumboormozhi is temporarly postponed due to non availability of land	wards still not supplied due to corona issues.		
C (ii)	Non bio degradable Waste Disposal	Haritha Karma sena	On going project	Completed the work of MCF but not started functioning due to complaint from local people			Not Updated
E	Awareness	Youth, Asha workers and other stake holders	On going project		Conducting based on the need		
A (b)	Identification of illegal outlets in to drains and stoppage of the same	Local Body	2022		12 Numbers of Soak pit completed		Not Updated
Thalipparamba Municipality							
A (b)	Sanitation Facility	Municipality					
C (ii)	Biodegradablewaste disposal						
	Non bio degradable Waste	Haritha Karma sena		non bio degradable	Not received the progress		

C (ii)	Disposal			waste is collecting through MCF and giving to Clean kerala Company	report		
E	Awareness	Youth, Asha workers and other stake holders	Once in a month				
Pattuvam GP							
E	Awareness	Youth, Asha workers and other stake holders	Whenever necessary		Not received the progress report		
C (ii)	Remova l of plastic wastes from the river bank						

Action Plan by Irrigation Department

Sl no	**Activity**	**Implementing Agency**	**Time for completion**	Progress in the month of July	Progress in the month of August	% works completed	Details of works remaining
1	Providing fencing on Kuppam bridge (NH) across Kuppam river at Thalipparamba in Thalipparamba Municipality	Irrigation department	2021				
2	Providing Fencing on Pazhayangadi Bridge across Kuppam River at Pazhayangadi	Irrigation Department	2021	(DPR Submitted for FS to the	Not received the report		

				CE (I&A) Tvpm dt.7.11.19 (3) vide Lr. No.D5-1429 Reju/19.)			
3	Regualting activites in flood plain zone, protection and management of flood plain zone	Irrigation Department	3 years				
4	Greenery development- Plantation plan. Plantation on both sides of the river, setting up biodiversity parks on flood plains by removing encroachment	Irrigation Department	3 years				
5	Issues relating to E- flow, maintaining minimum environmental flow of river(by having watershed management provisions)	Irrigation Department	3 years				

Combined ActionPlan

	Proposed action	Agency	Timeline	Progress in the month of July	Progress in the month of August	% works completed	Details of works remaining
1	Providetoilets to residences with treatment and disposal system for sewage and sullage	Local Body					
2	Construction of new community toilets with treatment system	All local bodies SuchitwaMission, Revenue department	Proposed Construction Of new community Toilet at satellite points on the bank ofriver				
3	Entry of rain water and rain water recharging to all channels and drain	All local bodies , Kerala Water Authority	Drains are inspected before rain and all channels and stream are cleaned once in a year				
4	Sanitary facility in hotels (around 7) one hospital,Establishments situated in the ward for the segregation, treatment and disposal of solid wastes as per SolidWastesManagementRules,2016	Pollution Control Board ,Health department	Check they have board consent and sanitation facility is provided				
5	Adequate number of kitchen bins shall beprovided	Municipalities and local bodies	One project year				
6	Providing proper waste handling facility. For wastewater and solid wastes	Local body	One project year				
7	Rendering plant for poultry wastes	Local body	As per their project and fund availability				

8	Slaughter house waste disposal facility	Local body	One common slaughter house for 3 to 4 local body				
9	Strict monitoring of disposal of waste(sewage, sullage, degradable waste, non-biodegradable waste) surveyed area and also in the catchment of theriver i)Verify Whether consent to operate of the Board exists	Pollution Control Board	Six months				
10	Sanitation survey is to be conducted for 100m on either sides of the other parts of polluted stretch if any located nearby	Pollution Control Board	Six months				
11	Awareness for residence association:	Suchitwamission/LSGD/Corporation	Once in a month				

Action Plan by Ground WaterDepartment – No progress report received

Sl.No	**Ref para no:48 as per NGT order 673/2018 dated:20.09.2018**	Activity	Progress in the month of July	Progress in the month of August	% works completed	Details of works remaining
1	B(i)	Ground Water resources and regulation of ground water extraction by industries particularly in over expolited as critical zones/blocks				
2	B(ii)	Ground water recharging / rain water harvesting				

3	B(iii)	Periodic ground waste quality assessment and remedial actions in case of con taminated ground water tube wells/bore wells or hand pumps				
4	B(iv)	For regulating use of ground water for irrigation purpose, adopting good irrigation practices				

4. Kuppam

	Parameters	Velichankeel	Mangalasserry	Kuppam bridge	Variankottam	Vellavu	Kuttyerikkada
	Date of collection	**24/08/2020**	**24/08/2020**	**13/08/2020**	**24/08/2020**	**24/08/2020**	**24/08/2020**
1	pH		6.65	6.59	6.66	6.36	6.97
2	Electrical Conductivity, µs/cm		115.05	442	167.5	146.4	58.3
3	BOD, mg/L		1.8	0.74	1.9	1.9	1.5
4	Dissolved Oxygen, mg/L		8	7.60	6.8	6.3	7.2
5	Total coliform, cfu/100ml		180	320	180	260	240
6	Faecal coliform , cfu/100ml		120	80	120	80	80
7	Turbidity		0.6	0.4	1.1	0.4	0.4
8	Total Hardness, mg/L		20	90	18	20	10
10	Calcium Hardness, mg/L		10	60	12	11	7
9	Magnesium Hardness, mg/L		10	30	6	9	3
11	Ammonia-NO_3, mg/L		BDL	BDL	BDL	BDL	BDL
12	Sulphate, mg/L		BDL	3.215	BDL	BDL	BDL
13	Phosphate, mg/L		BDL	BDL	BDL	BDL	BDL
14	Fluoride, mg/L		BDL	0.05	BDL	BDL	BDL
15	Total Alkalinity, mg/L		14	98	11	22	12
16	Chloride, mg/L		27	120	35	30	13

National Mission for Clean Ganga

Format for Submission of Monthly Progress Report by States/UTs
(Hon'ble NGT in the matter of OA No.673/2018 dated 06.12.2019)
RIVER PUZHAKKAL, THRISSUR

S. No.	Activity to be monitored	Timeline	Submission of progress by State/UT- Compliance status
1	Ensure 100% treatment of sewage at least in-situ remediation	31.08.2020	On progress
	Commencement of setting up of STPs and connecting all the drains and other sources of generation of sewage to the STPs must be ensured	31.08.2020	NA
2	Timeline for completing all steps of action plans including completion of setting up STPs and their Commissioning	On progress	1. STP Completed at Mattampuram 2. Tendered and awarded STP at district hospital – Applied for PCB permission
5	Chief Secretaries may set up appropriate monitoring mechanism at state level • Specifying accountability of nodal authorities not below the Secretary level • Chief Secretaries may have an accountable person attached in their office for this purpose		NA
	• Monitoring at State level must take place		NA
6	Progress report may be furnished by the State/UTs to • Secretary, Ministry of Jal Shakti • Member Secretary, CPCB		

6.1	Progress Report may be comprised of details along with completion timelines on: (I) Identification of polluting sources including drains contributing to river pollution and action as per NGT order on in-situ treatment. (II) <u>Status of STPs, I&D and sewerage networks</u> Details of Existing Infrastructure, Gap Analysis, Proposed along with completion timeline (III) <u>Status of CETPs</u> Details of Existing CETP and ETP Infrastructure, Gap Analysis, Proposed along with completion timeline, No. of industries and complying status (iv)<u>Status of Solid Waste Management & Details of Processing Facilities</u> Details of Existing Infrastructure, Gap Analysis, Proposed along with completion timeline (v) Latest water quality of polluted river, its tributaries, drains with flow details and ground water quality in the catchment of polluted river; (vi)Preventing dumping of waste and scientific waste management including bio-medical waste, plastic	Water quality monitoring of polluted river stretch is done periodically. (Report attached.)	Illegal outlets 91530 houses and 122 establishments) were identified and notice issued. Work tendered and selection memo issued. Agreement not executed. Reminder letter sent 70 percentage of industries installed ETPs. Notice were issued to remaining establishments Existing infrastructure 1. 10 mcf 2. 2 rrf 3. 2 OWC plant having capacity of 12 tpd 4. 8Biogas plant 5. 20 vehicles (2 truck, 2 tractors, 8 commercial utility vehicles, 8 petti auto) 6. 10 units of aerobic bins 7. 13o.s.o Harithakarmasena groups (140 members) 8. Door to Door Collection from 40,000

	waste and decentralizing waste processing, including waste generated from hotels, Ashrams, etc. (vii)Ground water regulation (viii) Adopting good irrigation practices (ix) Protection and management of food plain Zones (FPZ) (x) Rain water harvesting (xi)Maintaining minimum Environmental flow of river (xii) Plantation on both sides of the river (xiii)Setting up biodiversity parks on flood plains by removing encroachment	Riverside protection work for a stretch of 500 m has been completed. Construction of second stretch of 450m is ongoing	houses & 15000 commercial institutions <u>New Proposals</u> 1. 5nw Harithakarma sena will be formed 2. New Owc plant (Kovilakathumpadam) under construction 3. 2 MRF under construction 4. 3 nos. of commercial utility vehicle purchased for door to door collection 5. New bailing machine for RRF will be purchased 6. New building for segregation yard is planned and worth Rs.40 lakhs are year mark 7. 100% door to door collection can be achieved within 3 months. VI 1. To prevent dumping Corpration is indenting to collect the waste from 100% door 2. No. of dumping site could be reduced by the continuous monitoring &

			observations 3. Biomedical waste is processed by image. This year Corporation yearmark Rs. 1 crore for the construction of new biomedical incinerator at Corporation hospital. 4. Plastic waste are collected segregated and sent to recycling system. Multi layer plastics are shredded and used for road construction through clean kerala company. Non recyclable plastic wastes are sent to KEIL through Clean Kerala company. Corporation made a negotiation with ACC cement factory for co-processing of non recyclable plastic waste. 5. Bulk waste generators (hotels and Asrams) process their wastes in their own premises. They use biogas plant for aerobic compost bin.

ACTION PLAN FOR RIVER PUZHAKKAL, KERALA
SHORT TERM MEASURES

No. (as per Action Plan)	Activity	Implementing agency	Time line	Progress in the month of July	Progress in the month of August	% works completed	Details of works remaining
A(b)	Identification of illegal outlets into the Panchikkal thodu and subsidiary drains	Thrissur Corporation	3 months		24 second notice are issued. 8 illegal outlets are stopped.		
A(b)	Stoppage of discharge of waste water from the surrounding houses and institutions to the drains which leads to Panchikkal thodu	Thrissur Corporation	6 months		8		
A(b)	Ensure adequate treatment facility is provided for waste water and solid waste generated from Sri Dharma Sastha temple situated on the banks of the river	Adat Grama Panchayat					
E	Desilting of Karakattuchal	Irrigation Department	4 months				
E	Desilting of Panchikkal thodu	Irrigation Department	4 months				

E	Desilting of Kurinjikkal thuruth	Irrigation Department	4 months				
E	Desilting of Muppuzha	Irrigation Department	4 months				
E	Side protection, desilting and deepening work of vanchikulam thodu at Poothole of length about 40 km (work in progress).	Thrissur Corporation	3 months		Side protection one kilometer completed. Balance work in progress		
E	Annual desilting, cleaning of main drains and canals with in the corporation area (work in progress).	Thrissur Corporation	3 months		Completed before Monsoon.		
Monitoring							
A(a)(iv)	River water quality monitoring	KSPCB	Ongoing; monthly frequency		Report attached		
A(b)	Inspection & effluent quality monitoring of the Flats, industrial units, service stations, hospitals,hotels etc	KSPCB	Ongoing				
Long Term Plan							
A(b)	Ensuring installation of treatment facilities for at least 50% of the identified establishments	Thrissur Corporation	18 months				

A(b)	100% completion of treatment facilities for targeted institutions/ buildings	Thrissur Corporation	24 months				
A(b)	Construction of a drain 40 km with covering slabs to avoid the direct disposal of waste in to the open drain	Thrissur Corporation	24 months		15.02 km completed. Balance works are going on.		
A(b)	Construction of a drain 9000 m with covering slabs to avoid the direct disposal of waste in to the open drain	Thrissur Corporation	24 months				
A(b)	Construction of sewage treatment plant of 100 KLD and 360 KLD at Ramavarmapura m and District Hospital, Thrissur in Amrut Project	Thrissur Corporation	24 months		Tender completed. Selection memo issued. 360 kld PCB applied and awaiting for PCB approval. Work is going on.		

A(b)	Constructing decentralised sewerage scheme at Vachikulam covering most populated 7 divisions of Thrissur Corporation and more than 10000 houses & institutions	Thrissur Corporation	24 months		Revision of estimate under process according to structural veting.		

ACTION BY GROUND WATER DEPARTMENT

Sl. No.	Ref para item nos as per NGT Order no.673/2018 dated 20.09.2018	Activity	Progress in the month of July	Progress in the month of August	% works completed	Details of works remaining
1	B(i)	Ground Water resources and regulation of ground water extraction by industries particularly in over exploited as critical zones/blocks				
2	B(ii)	Ground water recharging / rain water harvesting				
3	B(iii)	Periodic ground waste quality assessment and remedial actions in case of contaminated ground water tube wells/bore wells or hand pumps				
4	B(iv)	For regulating use of ground water for irrigation purpose, adopting good irrigation practices				

ACTION PLAN BY GRAMAPANCHAYATH

No. (as per Action Plan)	Activity	Implementing agency	Time line	Progress in the month of July	Progress in the month of August	% works completed	Details of works remaining
C	Removing weeds in Puzhakkal River	Adat Gramapanchayath	31.03.2020				
C(ii)	Removing waste from all wards through kudumbasre e	KUDUMBASREE	31.03.2020				
C	water conservatio n projects-- tree plantation under GA in18 wards 100000/ each	MGNREGS	31.03.2020				
C	ward 14 pachthurthu comstruction	Haritha Keralam Mission	31.03.2020				
C	side protection to water bodies coir geo textile	MGNREGS	31.03.2020				

ANALYSIS REPORT OF PUZHAKKAL RIVER – AUGUST 2020

SL. NO	PARAMETER	UNIT	SBA	KTH	PTU	MP
1	pH	-	6.87	6.8	6.27	6.97
2	Electrical Conductivity		285.4	119.5	297.9	144.6
3	DO		8.3	3	4.2	6.8
4	BOD	mg/L	1.8	1.9	2.7	1.3
5	COD		12	8	12	8
6	TC		300	400	300	200
7	FC	CFU/100ml	100	200	100	100

- SBA - NEAR SOBHA CITY, KIZHAKKUMMURI ROAD , PUZHAKKAL
- KTH - KURINJAKKAL THODU, PUZHAKKAL
- PTU - PANCHIKKAL THODU, PUZHAKKAL
- MP - MUPPUZHA, PUZHAKAL

National Mission for Clean Ganga

Format for Submission of Monthly Progress Report by States/UTs

(Hon'ble NGT in the matter of OA No.673/2018 dated 06.12.2019)

RIVER KARUVANNUR, THRISSUR

S. No.	Activity to be monitored	Timeline	Submission of progress by State/UT- Compliance status
1	Ensure 100% treatment of sewage at least in-situ remediation		Yes
	Commencement of setting up of STPs and connecting all the drains and other sources of generation of sewage to the STPs must be ensured		STP implementation is going on
2	Timeline for completing all steps of action plans including completion of setting up STPs and their Commissioning		Process is going on
5	Chief Secretaries may set up appropriate monitoring mechanism at state level • Specifying accountability of nodal authorities not below the Secretary level • Chief Secretaries may have an accountable person attached in their office for this purpose		NA
	• Monitoring at State level must take place		
6	Progress report may be furnished by the State/UTs to • Secretary, Ministry of Jal Shakti • Member Secretary, CPCB		NA

6.1	Progress Report may be comprised of details along with completion timelines on: (I) Identification of polluting sources including drains contributing to river pollution and action as per NGT order on in-situ treatment.		STP implementation is going on
	(II) <u>Status of STPs, I&D and sewerage networks</u> Details of Existing Infrastructure, Gap Analysis, Proposed along with completion timeline		"
	(III) <u>Status of CETPs</u> Details of Existing CETP and ETP Infrastructure, Gap Analysis, Proposed along with completion timeline, No. of industries and complying status		"
	(iv)<u>Status of Solid Waste Management & Details of Processing Facilities</u> Details of Existing Infrastructure, Gap Analysis, Proposed along with completion timeline		Thumboormuzhi plant is running. Windrow compost plant is ready to start
	(v) Latest water quality of polluted river, its tributaries, drains with flow details and ground water quality in the catchment of polluted river;		NA
	(vi)Preventing dumping of waste and scientific waste management including bio-medical waste, plastic waste and decentralizing waste processing, including waste generated from hotels, Ashrams, etc.		As per Municipal Janakeeyasoothranam project project, we are implementing household waste treatment units like ring compost and kitchen bin with subsidy
	(vii)Ground water regulation		

	(viii) Adopting good irrigation practices (ix) Protection and management of food plain Zones (FPZ) (x) Rain water harvesting (xi)Maintaining minimum Environmental flow of river (xii) Plantation on both sides of the river (xiii)Setting up biodiversity parks on flood plains by removing encroachment		

ACTION PLAN FOR RIVER KARUVANNUR, KERALA
SHORT TERM MEASURES

No. (as per Action Plan)	Activity	Implementing agency	Time line	Progress in the month of July	Progress in the month of August	% works completed	Details of works remaining
Thirukuzhy thodu							
A(a)(iv)	Surveillance to restrict dumping of wastes into river and its branches	Vallachira Panchayat with the help of Police					
E	Cleaning and desilting of canal	Irrigation Department and Vallachira Panchayat	4months				
Thodu near Kadalassery bridge							
A(b)	Identification of pollution sources and surveillance to restrict dumping of wastes	Vallachira, Pudukad & Nenmanikkara Panchayats	1 month				
E	Cleaning and desilting	Irrigation Department and Vallachira Panchayat	4months				
Neerolithodu							
E	Cleaning and desilting	Irrigation Department	4months				

Painkilikayal thodu							
E	Cleaning and desilting	Irrigation Department and Vallachira Panchayat	4months				
Kadathodu							
A(b)	Identification of pollution sources and surveillance to restrict the dumping of wastes	Vallachira & Nenmanikkara Panchayats	1 month				
E	Cleaning and desilting	Irrigation Department	4months				
Main Stream –along Karuvannur							
A(a)(iv)	Periodic Surveillance to restrict the dumping of waste into river and imposing Fine	Irinjalakkuda Municipality, Police Dept.			Deputed officer for periodic survellia nce		
A(b)	Sanitation Survey	Irinjalakkuda Municipality	3 Months		1, 2, 3, 4 40, 41 wards complet ed survey		
A(b)	Closing of all un authorized outlets leading to the river	Irinjalakkuda Municipality			No outlets		
A(b)	Closing of all un authorized outlets in the drain leading to the river	Irinjalakkuda			No outlets		

		Municipality					
E	Boards to display slogans against littering waste in various Places other IEC Activities Like posters, notices and classes	Irinjalakkuda Municipality	6 months		Tender process is going on		
Monitoring							
A(a)(iv)	River water quality monitoring	KSPCB	Ongoing; monthly frequency				
A(b)	Inspection & effluent quality monitoring of the Flats, industrial units, service stations, hospitals,hotels etc	KSPCB	Ongoing				
Long Term Plan							
A(b)	Sewage treatment facilities to all house holds	Vallachira Grama Panachayat	1 yr				
A(b)	Construction of FSTP and STP	Irinjalakkuda Municipality	2 years		Process is going on for DPR preparation tender done		
C(ii)	Setting up of a modern crematorium at Mandarakkadavu, Arattupuzha	Vallachira Grama Panachayat	2 years				
C(ii)	Solid waste treatment facility	Vallachira Grama Panachayat	2 years				
C(ii)	Construction of Windrow composting plant	Irinjalakkuda Municipality	2 years		Plant is completed		

E	Rejuvenation of Kanathodu	Irrigation Department	1 year				
E	Installation of CCTV for Surveillance to prevent the dumping of waste in to the river	Irinjalakkuda Municipality	2 years		Police Department installed TV		

ACTION BY GROUND WATER DEPARTMENT

Sl. No.	Ref para item nos as per NGT Order no.673/2018 dated 20.09.2018	Activity	Progress in the month of July	Progress in the month of August	% works completed	Details of works remaining
1	B(i)	Ground Water resources and regulation of ground water extraction by industries particularly in over exploited as critical zones/blocks				
2	B(ii)	Ground water recharging / rain water harvesting				
3	B(iii)	Periodic ground waste quality assessment and remedial actions in case of contaminated ground water tube wells/bore wells or hand pumps				
4	B(iv)	For regulating use of ground water for irrigation purpose, adopting good irrigation practices				

ACTION PLAN BY GRAMAPANCHAYATH

No. (as per Action Plan)	Activity	Implementing agency	Time line	Progress in the month of July	Progress in the month of August	% works completed	Details of works remaining
C	MANALIPUZHA RIVER PROTECTION -Jalaraksha Jeevaraksha - Manalipuzha conservation	Vallachira Grama Panchayath	1 year				
C	Setting up of Nursery for Bamboo seedlings in Kadalassery	MGNREGS	31.03.2020				

C	Side protection of Manalippuzha with organic materials available locally	MGNREGS	31.03.2020				
C	Side Protection of Manalippuzha with Bamboo plants	MGNREGS	31.03.2020				
C	Deepening & Protecting Muttikkal Thodu by Spreading Geo Textiles	MGNREGS	31.03.2020				
C	Cluster 2-Kurumaly puzha sub river bed -Project document preparation	Puthukkad Panchayath	1 year				
C	Manalippuzha River Protection-Jala Raksha, Jeeva Raksha , Survey and Tree Plantation	Nenmenikkara Grama Panchayat	31.03.2020				
C	Manalipuzha River protection	MGNREGS	31.03.2020				
A(b)	Protection and reconstruction and protection of Paliyekkara Kayalathod	MGNREGS	31.03.2020				
A(b)	Reconstruction and protection of Paliyekkara Karama Thodu	MGNREGS	31.03.2020				

Sd/-

SECRETARY

IRINJALAKUDA MUNICIPALITY

ANALYSIS REPORT OF AUGUST 2020 – KARUVANNUR RIVER

SL. NO.	PARAMETER	UNIT	KT	MRK	KND	MDK	THR	KRV
1	pH	-	6.22	7.13	6.63	6.34	6.86	6.53
2	Electrical Conductivity	-	85.75	80.25	83.28	110	76.68	89.37
3	Dissolved Oxygen	mg/L	3.8	5.8	7.4	3.2	6.3	3
4	BOD	mg/L	2.2	1.8	2.8	1.9	2.5	1.9
5	COD	mg/L	7.9	4	7.9	12	7.9	7.9
6	TC	CFU/100ml	200	200	400	300	300	200
7	FC	CFU/100ml	100	100	200	100	100	100

KT - KANAKKAN KADAVU, KARUVANNUR
MRK - NEEROLI THODU, KARUVANNUR
KND - KANATHODU, KARUVANNUR
MDK - MUTTIKKAL DAM, KARUVANNUR
THR- THIRUKUZHI, KARUVANNUR
KRV - PAINKILIKAYAL THODU, KARUVANNUR

National Mission for Clean Ganga

Format for Submission of Monthly Progress Report by States/UTs

(Hon'ble NGT in the matter of OA No.673/2018 dated 06.12.2019)

RIVER KECHERY, THRISSUR

S. No.	Activity to be monitored	Timeline	Submission of progress by State/UT- Compliance status
1	Ensure 100% treatment of sewage at least in-situ remediation		DPR Submitted before KIIFB (Modern Market with STP at Wadakkanchery & Ottupara)
	Commencement of setting up of STPs and connecting all the drains and other sources of generation of sewage to the STPs must be ensured		DPR Submitted before KIIFB (Modern Market with STP at Wadakkanchery & Ottupara)
2	Timeline for completing all steps of action plans including completion of setting up STPs and their Commissioning		DPR Submitted before KIIFB (Modern Market with STP at Wadakkanchery & Ottupara) Athani 14.9 KLD Ottupara 18 KLD
5	Chief Secretaries may set up appropriate monitoring mechanism at state level • Specifying accountability of nodal authorities not below the Secretary level • Chief Secretaries may have an accountable person attached in their office for this purpose		NA
	• Monitoring at State level must take place		NA
6	Progress report may be furnished by the State/UTs to • Secretary, Ministry of Jal Shakti • Member Secretary, CPCB	Applicable at State Level	NA

6.1	Progress Report may be comprised of details along with completion timelines on: (I) Identification of polluting sources including drains contributing to river pollution and action as per NGT order on in-situ treatment. (II) <u>Status of STPs, I&D and sewerage networks</u> Details of Existing Infrastructure, Gap Analysis, Proposed along with completion timeline (III) <u>Status of CETPs</u> Details of Existing CETP and ETP Infrastructure, Gap Analysis, Proposed along with completion timeline, No. of industries and complying status (iv) <u>Status of Solid Waste Management & Details of Processing Facilities</u> Details of Existing Infrastructure, Gap Analysis, Proposed along with completion timeline (v) Latest water quality of polluted river, its tributaries, drains with flow details and ground water quality in the catchment of polluted river;	March 2021 30.09.2020 Tributaries Akamala Ottupara Thodu Drains-2 wadakanchery &Ottupara.	-Polluting sources identified and preventive measures completed. Doing Regular inspection -Illegal outlets were identified and notice was issued as per Kerala Municipal Act .In Further inspection outlets were found removed. Process on going. 2 common STPs are proposed, One at Athani (350 KLD approximate) and other at Ottupara (500 KLD approximate). Site identified. DPR under preparation NA **Bio-waste:** Presently using Bio gas plant. Construction of windrow compost plant 60% work completed. **Non-Bio waste:** Door to Door collection ongoing through Harithakarmasena. The collected waste handing over to Clean Kerala Company. Tender for installation of windrow composting at Kumbalangad completed.Work order issued.Non biodegradable wastes collected by Haritha karma sena. Biodegradable wastes by kudumbasree.

	(vi)Preventing dumping of waste and scientific waste management including bio-medical waste, plastic waste and decentralizing waste processing, including waste generated from hotels, Ashrams, etc.		Biomedical wastes collected by IMAGE.Two MRF were setup. Plastic waste handing over to Clean Kerala company every day by harithakarma sena.RCF(Cost of installing bailing machine and shredding machine remitted to Clean Kerala company).
	(vii)Ground water regulation		Construction of 1726 rain pits for ground water recharge completed in the year 2019-2020 under Ayyankali urban Employment scheme.
	(viii) Adopting good irrigation practices	Not yet started	Good irrigation practices will implement in cooperation with Agriculture and irrigation department
	(ix) Protection and management of food plain Zones (FPZ)	Not yet started	
	(x) Rain water harvesting	30.03.2022	Guaranteed the construction of Rain water harvesting facility for residential building above 150m2. Occupancy certificate issued only after verification of the above.
	(xi)Maintaining minimum Environmental flow of river	30.03.2022	Not yet started
	(xii) Plantation on both sides of the river		Bamboo planted along 6.5km of Wadakanchery river on both sides.

	(xiii)Setting up biodiversity parks on flood plains by removing encroachment		Encroachment removal ongoing. Already recovered 10.5Acre of encroached land. Will prepare Project for setting up of bio-diversity Parks

ACTION PLAN FOR RIVER KECHERY, KERALA

No. (as per Action Plan)	Activity	Implementing agency	Time line	Progress in the month of July	Progress in the month of August	% works completed	Details of works remaining
WADAKKENCHERY RIVER - SHORT TERM MEASURES							
A(b)	Identification of illegal outlets from houses and shops/other establishments in town and imposing fine	Wadakkanchery Municipality, Ayyakali Urban Employment Guarantee Scheme & health squad	Completed				
E	Installat ion of CCTV s on the bank of river in town	Wadakkanchery Municipality	September 2020				
C(ii)	Material recovery facility	Wadakkanchery Municipality	Completed				
C(ii)	Resource recovery facility	Wadakkanchery Municipality	Completed				
C(ii)	Renovation of existing biogas plant	Wadakkanchery Municipality	September 2020				
Monitoring							

A(a)(iv)	River water quality monitoring	KSPCB	Monthly Monitori ng in progress		Report attached		
A(b)	Inspection & effluent quality monitoring of the Flats, industrial units, service stations, hospitals,hotels etc	KSPCB	Ongoing		Ongoing		
Long Term Plan							
E	Identification and cleaning of polluted drains reaching wadakkancheri river	Irrigation Dept	30-03-2022				
A (b)	Common STP	Wadakkanchery Municipality, Kerala Infrastructure Investment Fund Board	March 2021				DPR under preparation
C(iii)	Windrow composting at Kumbalangad yard	Wadakkanchery Municipality	September 2020			60%	Revised estimate prepared
C(ii)	Modern slaughter House	Wadakkanchery Municipality, Kerala Infrastructure Investment Fund Board	March 2021				Lack of suitable site for the project.
E	Forestation, desilting & deepening of Wadakkanchery river and fitting river side with coir geo net	Wadakkanchery Municipality	desilting deepening of Wadkanchery River 3 km in				Fitting river side with Coir Geo net Project submitted before DPC

			Municipal area completed				
	Rain water harvesting	Wadakkanchery Municipality	Ongoing work				
	Ground water recharge	Wadakkanchery Municipality	Ongoing work				
	River survey	Wadakkanchery Municipality	Ongoing work				
Short term plan (Kecheri river)							
E	Installati on of CCTV in different locations along river side	PWD Electronic division					
E	Fixing Boards	Choondal Grama Panchayat	31/08/2020		ON going		
A(a)(iv)	Surveillance to prevent flow of sewage /effluent to river	Choondal Grama Panchayat	31/08/2020		Action taken		
A(b)	Stoppa ge of effluent from residential apartment (Shajan's flat) and pig farm into the river	Choondal Grama Panchayat	31/05/2020		Stop Memo Had been Given to Concerned persons		
Long Term Plan (Kecheri river)							
E	Side protection by fixing coir geo nets	Choondal Grama	September				

		Panchayat	2020				
E	Survey process of Kechery river portion belong to Choondal Grama Panchayat to mark the boundary and encroachment	Revenue Department					
E	Laying of survey station	Choondal Grama Panchayat	completed				
E	Digital maping and seminar on pollution control	Forestry College, Vellanikkara	31/05/2020				

IRRIGATION DEPARTMENT

No.	Activity	Implementing agency	Time line	Progress in the month of July	Progress in the month of August	% works completed	Details of works remaining
1	Regulating activities in flood plain zone, protection and management of flood plain zone	Irrigation Department	30-03-2022				Estimate submitted for fund
2	Greenery developmentPlantation plan. Plantation on both sides of the river, settling up biodiversity parks on flood plains by removing encroachment	Irrigation Department	30-03-2022				Estimate submitted for fund
3	Issues relating to E-flow, maintaining minimum environmental flow of river(by having watershed management provisions)	Irrigation Department	30-03-2022				Estimate submitted for fund

ACTION BY GROUND WATER DEPARTMENT

Sl. No.	Ref para item nos as per NGT Order no.673/2018 dated 20.09.2018	Activity	Progress in the month of July	Progress in the month of August	% works completed	Details of works remaining
1	B(i)	Ground Water resources and regulation of ground water extraction by industries particularly in over exploited as critical zones/blocks				
2	B(ii)	Ground water recharging / rain water harvesting				
3	B(iii)	Periodic ground waste quality assessment and remedial actions in case of contaminated ground water tube wells/bore wells or hand pumps				
4	B(iv)	For regulating use of ground water for irrigation purpose, adopting good irrigation practices				

ACTION PLAN BY GRAMAPANCHAYATH

No. (as per Action Plan)	Activity	Implementing agency	Time line	Progress in the month of July	Progress in the month of August	% works completed	Details of works remaining
C	Punarjani Kecherri river	Choondal Grama	31.03.2020		Flood Wastes from the river		

		Panchayat			has been removed and made water flow easily which reduced chances of flood .		
C(ii)	Surveying of river side, eviction and planting trees	Choondal Grama Panchayat	31.03.2020		Survey completed		
C	Side Protection	Choondal Grama Panchayat	31.03.2020				
C	Bio fencing related to river bank protection – water and soil Conservation project ward 3,4,7	MGNRES	31.03.2020				

ANALYSIS REPORT OF KECHERI RIVER

SL. NO	PARAMETER	UNIT	VAD1	VAD2
1	pH	-	6.16	
2	Electrical Conductivity	-	96.36	
3	DO	mg/l	7.2	
4	BOD	mg/L	1.7	
5	COD	mg/l	8	
6	TC	CFU/100ml	300	
7	FC	CFU/100ml	100	

VAD1 - WADAKKANCHERY PUZHA, KECHERY

VAD2 - WADAKKANCHERY PUZHA, KECHERY

VAD 2 – Could not collect due to containment zone restrictions