National Mission for Clean Ganga (NMCG)

Format for Submission of Monthly Progress Report by States / UTs'
(for the month ending May 2020)
(*Hon'ble NGT Order dated 06th December 2019 in a matter of O.A. 673 of 2018*)

Sr. No.	Activity to be monitored	Timeline	Submission of Progress Report by State / UT-Compliance Status
1	Ensure 100% treatment of sewage at least in-situ remediation	31.03.2020	Entire sewage received at Sewage Treatment Plant (STP) under SIDCGL is treated (*i.e. 100 % treatment*) and treated effluent is as per norms prescribed. At present, major towns (*i.e. Panaji / Margao & Vasco – Mormugao*) are having proper sewerage system. Sewerage system in Ponda, Mapusa, Calangute, Colva & Porvorim are in-progress. Whenever underground sewer network is not existing, conventional method of septic-tank / soak-pit is adopted by individual housing /complexes. Sludge generated from such systems are being disposed-off through Government-run STPs'. Many residential-cum-commercial complexes and hotel establishments have set-up their own STPs'. The Goa State Pollution Control Board (GSPCB) conducts Performance Evaluations of such STPs' on case-to-case basis to ascertain its compliance to CPCB-prescribed standards. In village or hinterland-areas (*i.e. pocket settlement areas*), stand alone soak-pit / septic-tanks system ensures effective treatment of domestic-sewage.
	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	Status and progress of STPs' are enclosed in **Annexure – A**. As regard to connecting of drains, Shirvodem nala (*located within Sal river catchment*) is diverted to 20-MLD capacity STP and tender of work to divert Khareband nallah is recently re-floated in May 2020.
2	Timeline for completing all steps of action plans	31.03.2021	Status of Action Plan for rejuvenation of polluted river-stretches is enclosed in **Annexure – B**.

	including completion of setting up STPs' and their commissioning.		
5	Chief Secretaries may set up appropriate monitoring mechanism at State level. a. Specifying accountability of nodal authorities not below the Secretary level. b. Chief Secretaries may have an accountable person attached in their office for this purpose.	22.01.2020	In-process and being addressed.
	c. Monitoring at State-level must take place	Fortnightly commencing 21.12.2019	Being addressed
6	Progress report may be furnished by the State /UTs' to – 1. Secretary, Ministry of Jal Shakti 2. Member Secretary, CPCB	Monthly (*preferably before 20th of every month*)	Noted.
6.1	Progress Report may be comprised of details along with completion timelines on:		

	(i) <u>Identification of polluting sources</u> 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 timelines. (iii)<u>Status of CETPs'</u> Details of existing CETP and ETP infrastructure, Gap Analysis, Proposed along with completion timeline, Number of Industries and complying status.		Completed. There are no drains, *per se*, that contribute to river pollution but, natural streams which are mainly dry except during monsoon season (*i.e. seasonal*). **Refer Annexure – A** (*submitted as a part of compliance against sr.no.(1) above*). The State does not have any Common Effluent Treatment Plant (ETPs'). Further, as there are no industrial units located within the catchment of any of the polluted river-stretches, no ETPs' are mandated therein.

	(iv) Status of Solid Waste Management & Details of Processing Facilities. Details of existing Infrastructure, Gap Analysis, Proposed along with completion timelines.		Kindly refer **Annexure - C**
	(v) Latest water quality of polluted rivers, its tributaries, drains with flow details and groundwater quality in the catchment of polluted rive;		**Kindly refer Annexure -D**
	(vi) Preventing dumping of waste and scientific waste management including bio-medical waste, plastic wastes and decentralising waste processing,		Being addressed.

	including waste generated from hotels, ashrams, etc.,		
	(vii) Ground water Regulation.		State of Goa declared entire Goa as Scheduled area. The Goa Ground Water Regulation Act, 2002and Rules, 2005 are in force and Ground Water Officers are appointed Taluka-wise.
	(viii) Adopting good irrigation practices,		For better irrigation practices, the Goa Irrigation Act, 1973 is enforced. The Canal irrigation is partly handed-over to Water Users Association (WUA). The micro-irrigation aspects are being addressed. For maintaining the irrigation canal, structures, WRD has well networked offices. Also Goa Command Area Development (CAD) Act, 1997 & Rules, 1999 is adopted for the purpose.
	(ix) Protection and management of Flood Plain Zones (FPZ),		Flood-prone areas are tackled at main three locations – Sanquelim, Bicholim & Panaji by installing pumping stations and protection bunds. Since five-years no major flood-related issues are faced by Goa.
	(x) Rain water harvesting,		Rain Harvesting Policy is adopted since 2008and for the purpose of encouragement among stakeholders, incentives are given to individual households / residential houses / residential complexes and apartment buildings. For commercial complexes and hospitality businesses as well as subsidies, *as fixed*, are granted only on a reimbursement basis.
	(xi) Maintaining minimum environmental flow		WRD is very much concerned with environmental flows of the river in the State to maintain ecological balance and due care is taken to keep the rivers / tributaries flowing with sufficient water flows.

	(e-flow) (xii) Plantation on both sides of the river. (xiii) Setting up Biodiversity Park on flood-plains by removing encroachments.		Not Applicable. In view of any absence of flood-plains along the banks of polluted river-stretches, setting up of Biodiversity parks is not practically feasible. However, the matter pertaining to illegal encroachment, if any, is being addressed by District Collector / Revenue Department from time-to-time.

Annexure - A

Annexure I

STATUS OF STP's and Sewerage System in State of GOA

1 Sewerage Coverage in Goa is only 16% and only 3 towns are having proper sewerage System with Sewage treatment Plant (STP) i.e. Panaji, Margao and vasco.
2 The sewerage Schemes are in progress in Mapusa, Calangute Baga, Porvorim, Taliegao, Sanquelim, Ponda, Colva, Navelim and their surrou
3 The Master Plan is prepared for State of Goa Covering Major Municipal areas / Towns in the state of Goa.
4 At present Treated water from STP's is released in Nallah, River or nearby water body, However action plan is prepared to utilise this water for gardening, Construction activities and othe non potable purposes. The water will be provided free of cost to the desirable consumers provided the consumer shall make the arrangement of conveyenace by tankers on their own.
5 The treated sludge is being taken as manure by desirable consumer, however the quantity utilised in minimal.
6 The Performance of the STP's are monitored regularly by GSPCB as well as by the department and the results are satisfactory.

Sr No.	Taluka	City / Town / Village	Status of Sewerage System / network / Scheme	Name/Location of STP	Status of STP	Technology Used for Treatment	Year of Commissioning	Installed Capacity (MLD)	Average Flow received during last month (MLD)	Mode of Disposal of Effluent	Quantity reused (KLD)	Quantity of Sludge Generated in STP (TPD)	Mode of Sludge Disposal	Average quantity of septage recieved (KLD)
1	Bardez	Porvorim	80 % network is completed	2 Nos. Of 7.5MLD STPs at Porvorim	Proposed	SBR Technology	-	15.00	-	-	NIL	-	NIL	NIL
		Porvorim	Commisioned	80 KLD at DTE- Porvorim	Operational	NTS	2015	0.08	0.05	Used for Gardening	NIL	NIL	NIL	NIL
		Mapusa	Network is completed and House connections are to be done	5.4 MLD at Kamarkhazan, Mapusa	Under Commisioning	SBR Technology	-	5.40	-	Nallah/River	NIL	NIL	NIL	NIL
		Calangute - Baga	Network is completed and House connections are to be done	5.6 MLD at Calangute - Baga	Under Commisioning	SBR Technology	-	5.60	-	Nallah/River	NIL	NIL	NIL	NIL
2	Sattari	Sanquelim	Commissioning in progress	0.8 MLD STP at Sanquelim	Under Commisioning	SBR Technology	-	0.80	-	-	NIL	-	NIL	NIL
3	Tiswadi	Panaji	Commissioned	12.5 MLD STP at Tonca	Operational	SBR Technology	2005	12.50	4.50	St. Inez Creek & small Qty is used for gardening		0.38	Given as Manure (part)	1600
		Panaji	Taliegao Network is to be commissioned	15.00 MLD STP at Tonca	Operational	SBR Technology	2017	15.00	4.00			0.40		
		Panaji	Commissioned	2.00 MLD STP at Patto	Under Construction	SBR Technology	-	2.00	-	-	NIL	NIL	NIL	NIL
		Bambolim	Commissioned	1.35 MLD STP at Goa	Operational	SBR Technology	2010	1.35	0.50	Gardening (part)	NIL	0.05	NIL	NIL
		St. Cruz	Commissioned	25 KLD at Santa Cruz- Bardez	Operational	MBR+MBBR	2015	0.025	0.017	Nallah	NIL	NIL	NIL	NIL
4	Ponda	Durbhat	Commissioned	1 MLD STP at Durbhat-Ponda	Operational	SBR Technology	2017	1.00	0.35	River	NIL	0.03	NIL	NIL
		Queula	80 % netowrk is completed in Ponda & Kavelem & House Connections are to be done	15 MLD STP at Quela-Ponda	Under Construction	SBR Technology	-	15.00	-	-	NIL	-	NIL	NIL
		Undir	60 % netowrk is completed & House Connections are to be done	15 MLD STP at Undir-Bandora,Ponda	Proposed	SBR Technology	-	15.00	-	-	NIL	-	NIL	NIL
		Curti	90 % netowrk is completed & House Connections are to be done	8 MLD STP at Curti-Ponda	Proposed	SBR Technology	-	8.00	-	-	NIL	-	NIL	NIL
		Ponda	Commisioned	100 KLD at Vrudavan Society - Ponda	Operational	NTS	2014	0.10	0.10	Nallah	NIL	NIL	NIL	NIL
5	Mormugoa	Vasco	Commissioned	20MLD STP at Katem Baina-Mormugao	Operational	SBR Technology	2018	20.00	4.5-5	Nullah/Sea	NIL	0.35-0.4	NIL	1000
		Sancaole	Commissioned	1 MLD STP at Sancaole-Cortalim	Operational	NTS	2017	1.00	0.90	Nallah		NIL	NIL	NIL

GAP ANALYSIS of STP's

6	Salcette	Shirvodem Margao	Network is completed in Margao and House Connections are in progress. Scheme is 80% Commissioned	20MLD STP at Shirvodem-Navelim	Operational	SBR Technology	2017	20.00	7.00	Nallah/River	NIL	0.60	Given as Manure (part)	1250
		Shirvodem Margao		6.75 MLD STP at Shirvodem Margao	Operational	SBR Technology	2017	6.75	2.00-3.00	Nallah/River	NIL	NIL	NIL	
		Colva	70 % Network is completed	7.5 MLD STP at Colva	Under Construction	SBR Technology	-	7.50	-	-	NIL	-	NIL	NIL

12/2/20

Managing Director-SIDCGL

Annexure - B

Action Plan for River Rejuvenation for polluted stretches of Goa.

Annexure-II

Department -SIDCGL

Sr No.	Action Strategy	River Stretch	Time Frame	Status
	Sal river – Priority- III (From Mobor to Khareband Madgaon)			
1	Natural treatment (SIBF/ Phytorid Beds) will be installed immediately in eighteen months along the banks in order to avoid the pollution	Khareband to Mobor 1.Shirvodem	18 months	The flow from shirvodem Nallah is presently diverted to 20MLD STP at Shirvodem, Navelim. Same is being treated & left in the nullah on downstream side, the flow diverted water ranges from 2-5 MLD. The treated effluent is as per the norms laid by GSPCB.
		2. Khareband		As there is no space on the banks of nallah in situ treatment of nallah was proposed and Khareband Nallah being the most polluted was choosen to be treated but during inspection with WRD official it was learned that there is objection for construction of retaining wall along the banks In view of this work of diverting this Nallah water to nearby Sewer line which flows to 20MLD STP Navelim is tendered on 11.02.2020.
2	Recycling and Reuse of treated sewage from the Sewage treatment plant at Navelim for flushing and maintaining E-flow during dry season	Khareband to Mobor	18 months	Conditional Consent to release treated effluent from Colva STP in Sal river is received from Goa Pollution Control 24/11/2019 before restarting of work in order to comply the directive of the Hon'ble High Court.Board. Work was stopped due to Local Objection for last 2 years and as per the latest directions of High Court of Bombay, Goa Bench, a public awareness meeting was held on 24/11/2019 before restarting of work in order to comply the directive of the Hon'ble High Court.The Work will be started coming week.
	Zuari River- Priority – V – (from Curchorem to Madkai)			
1	The underground sewerage scheme in progress for Ponda municipal area including Curti, Bandora, Kavelem, Undir and area close to Kapleshwari nallah which further joins the Zuari River. Three STP's are proposed at Curti, Kavelem and Bandora of capacity 8MLD, 15MLD and 15MLD respectively.		12 months	Land for Bandora STP is procured. The Matter of Bandora STP was subjudice for last 1 and half year in NGT, same is ruled in favour of State of Goa. During this period, The offer quoted by lowest bidder is withdrawn by the agency and same work needs to be retendered. In respect to Kavlem STP, 60% of work has been completed at present 75% work of sewerage network is laid. Work of house connection is tendered and connection will be released once the STP is commissioned. Kavlem STP can be Partially commissioned by may 2020. With regards to Curti STP, The judgement of the case filed before Additional Directorate of Panchayat was passed in favour of SIDCGL and the procurement of land for STP at Curti is in progress. Sewerage scheme with 1 MLD STP is commissioned in september 2017 for Durbhat village which is on the bank on River Zuari.
	Valvanti River – Priority – V- from Poriem to Sanquelim-Bicholim			
1	Commissioning of existing sewerage network and STP 0.8 MLD capacity. (Covering 3 wards)	a) Sanquelim b) 3 wards i.e. Bandharwada, Muslim Wada Muzar wada & Gokulwadi	12 months	Work of refurbishment of STP and laying of sewer line is completed, testing is in progress and expected to be commissioned end of February 2020, as house sewer connections are in progress which are being done by GSIDC.

NOTE: With regards to point no. 1 i.e. Khareband to Mobor (For River Sal), it is observed that one of the major source of pollution is illegal discharge of untreated sewage in the drains/nalllahs / tributaries which eventually joins River sal. The plugging / abatement of illegal discharge by regulatory / administrative measures will eliminate creation of such treatment facilities.

12/12/20

Managing Director-SIDCGL

Annexure - C

Status of Solid Waste Management & Details of Processing Facilities

A. Compliance to Solid waste Rules including Legacy waste			
Sr. No.	**Clause as referred in SWM Rules, 2016**	**Current status**	**Proposal of attending the gap with the timeline**
1	**Clause – 29 / 39 (i) -** Compliance under Rule 22 of Solid Waste Management (SWM) Rules 2016.	**Integrated Solid Waste Management Facility** (SWMF) (*100 tons per day - TPD*) at Saligao has been augmented to 150 TPD for disposal / treatment of solid wastes generated from twenty-seven village Panchayats and further has proposed its **enhancement from existing 150-TPD to 250-TPD (+20%).**	The project was scheduled to commence in March 2020 however due to administrative and financial approvals, and COVID 19 pandemic and consequent lockdowns, approval is expected to be completed by end of June 2020 where contract agreement will be signed with concessionaire and the project construction is expected to commence effectively post monsoons i.e. Sept 2020 and to be completed in 12 months, for trial operations which requires another 3 months time. Therefore, the timeline for the effective operation of expanded Saligao plant to 250TPD is **Dec 2021**
		Integrated Solid Waste Management Facility – Cacora (*100 TPD +20%***)** Letter of Award has been issued and the Concession Agreement has been executed.	The project was scheduled to commence in the month of March 2020 however due to COVID 19 pandemic, consequent lockdowns and monsoons, the work shall commence post monsoons inSeptember 2020 and to be completed in 18 months i.e. March 2022 which includes 3 months of trial operation.
		Integrated Solid Waste Management Facility- Bainguinim (250 TPD +20%) - Environmental Clearance (EC) has been granted and tender document has been floated.	The tender for Solid Waste Management Facility at Bainguinim was proposed to be floated by December 2020 after incorporating estimates of GSR 2019 and tweaking the tender document accordingly and work towards same shall commence April 2021 and expected to be completed in 18 months i.e. October 2022 which includes 3 months of trial operation
		Solid Waste Management Facility –Verna (250 TPD + 20%) Tender for conducting Rapid EIA studies was floated and letter of Intent (LoI) to the lowest bidder was issued on 15-06-2020.	GWMC to complete EIA studies by December 2020. Upon grant of EC, GWMC shall float tender for SWMF 250 TPD.
		Legacy dump and its management Till date the State has remediated approximately 1,23,000 tons of waste from legacy dumps at Saligao, Cacora and Aradi. GWMC has issued work orders to 3 bidders to remediate 11 legacy waste dumps sites in the State of Goa out which work has commenced at Sonsodo, Headland Sada, Assagao and Campal .	Two Years (Excluding Monsoon) from the date of issue of work order i.e. 28/09/2021 and 36 months from issue of work order for disposal of RDF in Cement Factories. i.e. 28/02/2024

Annexure –D

1.RIVER CHAPORA NEAR ALORNA FORT, PERNEM					
Sr. No.	**Parameters**	**Nov-19**	**Dec-19**	**Jan-20**	**Limit for class C river as per CPCB classification based on designated best use of rivers**
1	pH	7.1	6.68	7.11	6.0-9.0
2	Dissolved Oxygen mg/l	7.3	7.8	8.5	4 mg/l or more
3	BOD mg/l	BDL	2.1	BDL	3 mg/l or less
4	Total Coliform MPN/100ml	3300	3300	7900	5000 or less MPN/100 ml
Remarks : Total Coliform exceeds permissible limits of Class C in the month of January 2020					

RIVER CHAPORA NEAR SIOLIM BRIDGE					
Sr. No.	**Parameters**	**Nov-19**	**Dec-19**	**Jan-20**	**Limit for SW II river as per CPCB classification based on designated best use of rivers**
1	pH	7.89	8.12	7.2	6.5-8.5
2	Turbidity (NTU)	2.43	5.8	4.28	30 NTU
3	Dissolved Oxygen mg/l	7.3	6.5	5	4 mg/l or more
4	BOD mg/l	2	BDL	BDL	3 mg/l or less
5	Fecal Coliform MPN/100ml	2300	3300	3300	100 or less MPN/100ml
Remarks: Fecal coliform exceeds permissible limits of SW II in the month of November 2019 - January 2020					

2. TIRACOL AT KERI, PERNEM					
Sr. No.	**Parameters**	**Nov-19**	**Dec-19**	**Jan-20**	**Limit for SW II river as per CPCB classification based on designated best use of rivers**
1	pH	7.77	7.57	7.8	6.5-8.5
2	Turbidity (NTU)	2.55	4.65	1.61	30 NTU
3	Dissolved Oxygen mg/l	6.7	6.5	6.7	4 mg/l or more
4	BOD mg/l	BDL	2.5	BDL	3 mg/l or less
5	Fecal Coliform MPN/100ml	1700	2200	2200	100 or less MPN/100ml
Remarks: Fecal coliform exceeds permissible limits of SW II in the month of November 2019 - January 2020					

3.RIVER SINQUERIM, CANDOLIM SIDE					
Sr. No.	**Parameters**	**Nov-19**	**Dec-19**	**Jan-20**	**Limit for SW II river as per CPCB classification based on designated best use of rivers**
1	pH	6.18	7.73	7.76	6.5-8.5
2	Turbidity (NTU)	5.94	2.94	5.8	30 NTU
3	Dissolved Oxygen mg/l	5.1	5.5	5.9	4 mg/l or more
4	BOD mg/l	BDL	BDL	BDL	3 mg/l or less
5	Fecal Coliform MPN/100ml	2100	1700	2300	100 or less MPN/100ml
Remarks: Fecal coliform exceeds permissible limits of SW II in the month of November 2019 - January 2020					

RIVER SINQUERIM, NEAR GANPATI TEMPLE					
Sr. No.	**Parameters**	**Nov-19**	**Dec-19**	**Jan-20**	**Limit for SW II river as per CPCB classification based on designated best use of rivers**
1	pH	6.15	7.79	7.61	6.5-8.5
2	Turbidity (NTU)	5.94	2.73	7.46	30 NTU
3	Dissolved Oxygen mg/l	5.5	5.1	5.5	4 mg/l or more
4	BOD (mg/l)	BDL	BDL	BDL	3 mg/l or less
5	Fecal Coliform MPN/100ml	1300	1300	1300	100 or less MPN/100ml
Remarks: Fecal coliform exceeds permissible limits of SW II in the month of November 2019 - January 2020					

4. RIVER ZUARI AT MADKAI JETTY					
Sr. No.	**Parameters**	**Nov-19**	**Dec-19**	**Jan-20**	**Limit for SW II river as per CPCB classification based on designated best use of rivers**
1	pH	7.54	7.84	7.6	6.5-8.5
2	Turbidity (NTU)	8.49	3.32	4.18	30 NTU
3	Dissolved Oxygen mg/l	5	6.7	7.1	4 mg/l or more
4	BOD mg/l	BDL	2.7	2.6	3 mg/l or less
5	Fecal Coliform MPN/100ml	2200	2300	1300	100 or less MPN/100ml
Remarks: Fecal coliform exceeds permissible limits of SW II in the month of November 2019 - January 2020.					

RVER ZUARI AT BORIM BRIDGE					
Sr. No.	**Parameters**	**Nov-19**	**Dec-19**	**Jan-20**	**Limit for SW II river as per CPCB classification based on designated best use of rivers**
1	pH	7.05	6.98	6.72	6.5-8.5
2	Turbidity (NTU)	2.31	12.44	8.59	30 NTU
3	Dissolved Oxygen mg/l	4.5	5.3	7.4	4 mg/l or more
4	BOD (mg/l)	BDL	2.8	2.4	3 mg/l or less
5	Fecal Coliform MPN/100ml	1300	2300	1700	100 or less MPN/100ml
Remarks: Fecal coliform exceeds permissible limits of SW II in the month of November 2019 - January 2020					

5. RIVER ASSANORA AT ASSANORA					
Sr. No.	**Parameters**	**Nov-19**	**Dec-19**	**Jan-20**	**Limit for class C river as per CPCB classification based on designated best use of rivers**
1	pH	6.96	6.9	6.5	6.0-9.0
2	Dissolved Oxygen mg/l	6.5	7.3	7.2	4 mg/l or more
3	BOD mg/l	BDL	2.6	BDL	3 mg/l or less
4	Total Coliform MPN/100ml	2200	3300	2300	5000 or less MPN/100 ml
Remarks: All parameters within permissible limits of Class C from November 2019-January 2020					

6. RIVER VALVANTI AT SINQUELIM					
Sr. No.	**Parameters**	**Nov-19**	**Dec-19**	**Jan-20**	**Limit for class C river as per CPCB classification based on designated best use of rivers**
1	pH	6.97	6.93	6.9	6.0-9.0
2	Dissolved Oxygen mg/l	7.4	7.2	8.1	4 mg/l or more
3	BOD mg/l	BDL	BDL	2	3 mg/l or less
4	Total Coliform MPN/100ml	2700	4900	2600	5000 or less MPN/100 ml
Remarks: All parameters within permissible limits of Class C from November 2019-January 2020					

7. RIVER KHANDEPAR, OPA, PONDA					
Sr. No.	**Parameters**	**Nov-19**	**Dec-19**	**Jan-20**	**Limit for class C river as per CPCB classification based on designated best use of rivers**
1	pH	7.25	7.2	7.38	6.0-9.0
2	Dissolved Oxygen mg/l	7	7	7.3	4 mg/l or more
3	BOD mg/l	BDL	BDL	BDL	3 mg/l or less
4	Total Coliform MPN/100ml	2200	3300	1700	5000 or less MPN/100 ml
Remarks: All parameters within permissible limits of Class C from November 2019-January 2020					

RIVER KHANDEPAR AR CODLI					
Sr. No.	**Parameters**	**Nov-19**	**Dec-19**	**Jan-20**	**Limit for class C river as per CPCB classification based on designated best use of rivers**
1	pH	7.14	7.18	7.33	**6.0-9.0**
2	Dissolved Oxygen mg/l	7.5	7.8	7.4	**≥ 4.0**
3	BOD mg/l	BDL	BDL	BDL	**≤ 3.0**
4	Total Coliform MPN/100ml	3300	2200	2200	**≤5000**
Remarks: All parameters within permissible limits of Class C from November 2019-January 2020					

8.RIVER BICHOLIM, BARAZAN NAGAR, BICHOLIM					
Sr. No.	**Parameters**	**Nov-19**	**Dec-19**	**Jan-20**	**Limit for class C river as per CPCB classification based on designated best use of rivers**
1	pH	6.52	7.4	7.46	6.0-9.0
2	Dissolved oxygen mg/l	7.9	6.7	7.8	4 mg/l or more
3	BOD mg/l	2.9	BDL	2.8	3 mg/l or less
4	Total Coliform MPN/100ml	11000	11000	17000	5000 or less MPN/100 ml
Remarks: Total Coliform exceeds permissible limits of Class C in the month of November 2019 - January 2020					

9. RIVER MANDOVI AT TONCA MARCELA					
Sr. No.	**Parameters**	**Nov-19**	**Dec-19**	**Jan-20**	**Limit for SW II river as per CPCB classification basd on designated best use of rivers**
1	pH	6.75	7.3	7.05	6.5-8.5
2	Turbidity (NTU)	3.6	BDL	2.24	30 NTU
3	Dissolved Oxygen mg/l	6.5	5.3	5.6	4 mg/l or more
4	BOD mg/l	2	BDL	BDL	3 mg/l or less
5	Fecal Coliform MPN/100ml	2300	1300	1300	100 or less MPN/100ml
Remarks: Fecal coliform exceeds permissible limits of SW II in the month of November 2019 - January 2020					

10. RIVER TALPONA AT CANACONA					
Sr. No.	**Parameters**	**Nov-19**	**Dec-19**	**Jan-20**	**Limit for class C river as per CPCB classification based on designated best use of rivers**
1	pH	7.02	7	7.2	6.0-9.0
2	Dissolved Oxygen mg/l	7.6	7.7	7.6	4 mg/l or more
3	BOD mg/l	BDL	BDL	BDL	3 mg/l or less
4	Total Coliform MPN/100ml	2200	1300	1400	5000 or less MPN/100 ml
Remarks: All parameters within permissible limits of Class C from November 2019-January 2020					

11. RIVER SAL AT KHAREBAND, MARGAO					
Sr. No.	**Parameters**	**Nov-19**	**Dec-19**	**Jan-20**	**Limit for SW II river as per CPCB classification based on designated best use of rivers**
1	pH	6.77	6.7	6.68	6.5-8.5
2	Turbidity (NTU)	4.63	4.01	10.41	30 NTU
3	Dissolved Oxygen mg/l	0.8	BDL	BDL	4 mg/l or more
4	BOD (mg/l)	3.4	5	6	3 mg/l or less
5	Fecal Coliform MPN/100ml	11000	17000	13000	100 or less MPN/100ml
Remarks: Fecal Coliform and BOD are exceeding the permissible limits of SW II in the month of November 2019-January 2020.Dissoved Oxygen is less than the permissible limits in the month of November 2019- January 2020					

RIVER SAL AT MOBOR					
Sr. No.	**Parameters**	**Nov-19**	**Dec-19**	**Jan-20**	**Limit for SW II river as per CPCB classification based on designated best use of rivers**
1	pH	7.58	7.5	7.9	6.5-8.5
2	Turbidity (NTU)	5.3	2.28	6.61	30 NTU
3	Dissolved Oxygen mg/l	5.5	6.2	6	4 mg/l or more
4	BOD (mg/l)	BDL	BDL	BDL	3 mg/l or less
5	Fecal Coliform MPN/100ml	3300	3300	3300	100 or less MPN/100ml
Remarks: Fecal coliform exceeds permissible limits of SW II in the month of November 2019 - January 2020					

NOTE: BDL, Below Detection Limit value for parameter BOD is < 2 mg/L
NOTE: BDL, Below Detection Limit value for parameter Dissolved Oxygen is < 0.1 mg/L

1.RIVER CHAPORA NEAR ALORNA FORT, PERNEM					
Sr.No.	**Parameters**	**Feb-20**	**March - 20**	**April- 20**	**Limit for class C rivers as per CPCB classification based on designated best use of rivers**
1	pH	6.9	6.8	6.93	6.0-9.0
2	Dissolved Oxygen mg/l	7.6	7.2	7.4	4 mg/l or more
3	BOD mg/l	BDL	BDL	BDL	3 mg/l or less
4	Total Coliform MPN/100ml	2300	2200	1700	5000 or less MPN/100ml
Remarks: All parameters are within permissible limits of Class C from February 2020-April 2020					

RIVER CHAPORA NEAR SIOLIM BRIDGE					
Sr.No.	**Parameters**	**Feb-20**	**March - 20**	**April- 20**	**Limit for SW II rivers as per CPCB classification based on designated best use of rivers**
1	pH	7.7	7.7	7.59	6.5-8.5
2	Turbidity (NTU)	3.66	1.67	BDL	30 NTU
3	Dissolved Oxygen mg/l	6.7	6.7	6.0	4 mg/l or more
4	BOD mg/l	BDL	2.1	BDL	3 mg/l or less
5	Fecal Coliform MPN/100ml	2300	780	450	100 or less MPN/100ml
Remarks: Fecal Coliform exceeds permissible limits of SW II in the month of February 2020-April 2020					

2.TIRACOL AT KERI, PERNEM					
Sr.No.	**Parameters**	**Feb-20**	**March - 20**	**April- 20**	**Limit for SW II rivers as per CPCB classification based on designated best use of rivers**
1	pH	7.7	6.5	7.73	6.5-8.5
2	Turbidity (NTU)	4.06	3.73	2.32	30 NTU
3	Dissolved Oxygen mg/l	7.5	6.5	4.5	4 mg/l or more
4	BOD mg/l	BDL	2.0	BDL	3 mg/l or less
5	Fecal Coliform MPN/100ml	1300	130	110	100 or less MPN/100ml
Remarks: Fecal Coliform exceeds permissible limits of SW II in the month of February 2020-April 2020					

3.RIVER SINQUERIM, CANDOLIM SIDE					
Sr.No.	**Parameters**	**Feb-20**	**March - 20**	**April- 20**	**Limit for SW II rivers as per CPCB classification based on designated best use of rivers**
1	pH	7.4	7.4	6.89	6.5-8.5
2	Turbidity (NTU)	4.53	10.58	8.99	30 NTU
3	Dissolved Oxygen mg/l	5.7	4.8	4.5	4 mg/l or more
4	BOD mg/l	BDL	BDL	BDL	3 mg/l or less
5	Fecal Coliform MPN/100ml	1300	1300	780	100 or less MPN/100ml
Remarks: Fecal Coliform exceeds permissible limits of SW II in the month of February 2020-April 2020					

RIVER SINQUERIM, NEAR GANPATI TEMPLE					
Sr.No.	**Parameters**	**Feb-20**	**March - 20**	**April- 20**	**Limit for SW II rivers as per CPCB classification based on designated best use of rivers**
1	pH	7.5	7.4	6.92	6.5-8.5
2	Turbidity (NTU)	4.13	9.94	6.06	30 NTU
3	Dissolved Oxygen mg/l	5.7	4.9	4.7	4 mg/l or more
4	BOD mg/l	BDL	BDL	BDL	3 mg/l or less
5	Fecal Coliform MPN/100ml	1100	1700	450	100 or less MPN/100ml
Remarks: Fecal Coliform exceeds permissible limits of SW II in the month of February 2020-April 2020					

4.RIVER ZUARI AT MADKAI JETTY					
Sr.No.	**Parameters**	**Feb-20**	**March - 20**	**April- 20**	**Limit for SW II rivers as per CPCB classification based on designated best use of rivers**
1	pH	7.4	7.6	7.56	6.5-8.5
2	Turbidity (NTU)	2.77	2.3	19.3	30 NTU
3	Dissolved Oxygen mg/l	5.3	5.2	5.8	4 mg/l or more
4	BOD mg/l	3.0	BDL	BDL	3 mg/l or less
5	Fecal Coliform MPN/100ml	1300	2300	1100	100 or less MPN/100ml
Remarks: Fecal Coliform exceeds permissible limits of SW II in the month of February 2020-April 2020					

RIVER ZUARI AT BORIM BRIDGE					
Sr.No.	**Parameters**	**Feb-20**	**March - 20**	**April- 20**	**Limit for SW II rivers as per CPCB classification based on designated best use of rivers**
1	pH	7.2	7.2	6.9	6.5-8.5
2	Turbidity (NTU)	5.71	2.79	3.51	30 NTU
3	Dissolved Oxygen mg/l	7.2	6.4	4.8	4 mg/l or more
4	BOD mg/l	BDL	2.3	BDL	3 mg/l or less
5	Fecal Coliform MPN/100ml	1700	1100	140	100 or less MPN/100ml
Remarks: Fecal Coliform exceeds permissible limits of SW II in the month of February 2020-April 2020					

5.RIVER ASSANORA AT ASSANORA					
Sr.No.	**Parameters**	**Feb-20**	**March - 20**	**April- 20**	**Limit for class C rivers as per CPCB classification based on designated best use of rivers**
1	pH	6.9	6.5	6.7	6.0-9.0
2	Dissolved Oxygen mg/l	6.7	6.5	6.9	4 mg/l or more
3	BOD mg/l	BDL	BDL	BDL	3 mg/l or less
4	Total Coliform MPN/100ml	2200	1300	1300	5000 or less MPN/100ml
Remarks: All parameters are within permissible limits of Class C from February 2020-April 2020					

6.RIVER VALVANTI AT SANQUELIM					
Sr.No.	**Parameters**	**Feb-20**	**March - 20**	**April- 20**	**Limit for class C rivers as per CPCB classification based on designated best use of rivers**
1	pH	7	6.7	6.7	6.0-9.0
2	Dissolved Oxygen mg/l	8.4	7	7.1	4 mg/l or more
3	BOD mg/l	BDL	BDL	BDL	3 mg/l or less
4	Total Coliform MPN/100ml	4900	2300	2300	5000 or less MPN/100ml
Remarks: All parameters are within permissible limits of Class C from February 2020-April 2020					

7.RIVER KHANDEPAR, OPA, PONDA					
Sr.No.	**Parameters**	**Feb-20**	**March - 20**	**April- 20**	**Limit for class C rivers as per CPCB classification based on designated best use of rivers**
1	pH	7.0	7.0	7.7	6.0-9.0
2	Dissolved Oxygen mg/l	7.0	7.1	6.7	4 mg/l or more
3	BOD mg/l	BDL	BDL	BDL	3 mg/l or less
4	Total Coliform MPN/100ml	1700	230	270	5000 or less MPN/100ml
Remarks: All parameters are within permissible limits of Class C from February 2020-April 2020					

RIVER KHANDEPAR, CODLI					
Sr.No.	**Parameters**	**Feb-20**	**March - 20**	**April- 20**	**Limit for class C rivers as per CPCB classification based on designated best use of rivers**
1	pH	7.3	7.4	6.8	6.0-9.0
2	Dissolved Oxygen mg/l	7.6	7.3	7.0	≥4 mg/l or more
3	BOD mg/l	BDL	BDL	BDL	≤3.0
4	Total Coliform MPN/100ml	1700	490	220	≤5000
Remarks: All parameters are within permissible limits of Class C from February 2020-April 2020					

8.RIVER BICHOLIM BARAZAN NAGAR, BICHOLIM					
Sr.No.	**Parameters**	**Feb-20**	**March - 20**	**April- 20**	**Limit for class C rivers as per CPCB classification based on designated best use of rivers**
1	pH	7.7	7.1	6.8	6.0-9.0
2	Dissolved Oxygen mg/l	9.2	7.4	7.1	4 mg/l or more
3	BOD mg/l	BDL	BDL	BDL	3 mg/l or less
4	Total Coliform MPN/100ml	7900	7900	4900	5000 or less MPN/100ml
Remarks: Total Coliform exceeds permissible limits of Class C in the month of February 2020-April 2020					

9.RIVER MANDOVI AT TONCA MARCELA					
Sr.No.	**Parameters**	**Feb-20**	**March - 20**	**April- 20**	**Limit for class SW II rivers as per CPCB classification based on designated best use of rivers**
1	pH	7.2	7.2	7.2	6.5-8.5
2	Turbidity(NTU)	2.3	3.65	2.28	30 NTU
2	Dissolved Oxygen mg/l	6.0	5.1	5.6	4 mg/l or more
3	BOD mg/l	BDL	BDL	BDL	3 mg/l or less
4	Fecal Coliform MPN/100ml	39	241	330	100 or less MPN/100ml
Remarks: Fecal Coliform exceeds permissible limits of SW II in the month of February 2020-April 2020					

10.RIVER TALPONA AT CANACONA					
Sr.No.	**Parameters**	**Feb-20**	**March - 20**	**April- 20**	**Limit for class C rivers as per CPCB classification based on designated best use of rivers**
1	pH	7.1	7.5	6.8	6.0-9.0
2	Dissolved Oxygen mg/l	7.8	7.7	6.6	4 mg/l or more
3	BOD mg/l	BDL	BDL	BDL	3 mg/l or less
4	Total Coliform MPN/100ml	1700	1300	790	5000 or less MPN/100ml
Remarks: All parameters are within permissible limits of Class C from February 2020-April 2020					

11.RIVER SALAT KHAREBAND,MARGAO					
Sr.No.	**Parameters**	**Feb-20**	**March - 20**	**April- 20**	**Limit for class SW II rivers as per CPCB classification based on designated best use of rivers**
1	pH	6.7	SAMPLE NOT COLLECTED	SAMPLE NOT COLLECTED	6.5-8.5
2	Turbidity(NTU)	6.95			30 NTU
3	Dissolved Oxygen mg/l	BDL			4 mg/l or more
4	BOD mg/l	3.6			3 mg/l or less
5	Fecal Coliform MPN/100ml	7900			100 or less MPN/100ml
Remarks: BOD and Fecal Coliform exceeds permissible limits of SW II in the month of February 2020-April 2020					

RIVER SAL AT MOBOR					
Sr.No.	**Parameters**	**Feb-20**	**March - 20**	**April- 20**	**Limit for class SW II rivers as per CPCB classification based on designated best use of rivers**
1	pH	7.6	7.1	7.9	6.5-8.5
2	Turbidity(NTU)	7.49	64.1	2.33	30 NTU
3	Dissolved Oxygen mg/l	5.3	4.9	5.6	4 mg/l or more
4	BOD mg/l	BDL	BDL	BDL	3 mg/l or less
5	Fecal Coliform MPN/100ml	2200	2100	1300	100 or less MPN/100ml
Remarks:Fecal Coliform exceeds permissible limits of SW II in the month of February 2020-April 2020					

NOTE:

1)BDL- Below Detection Limit

2)Below detection limit value for parameter BOD is <2 mg/l

3)Below detection limit value for parameter Dissolved Oxygen is <1.0 mg/l

4)Below detection limit value for parameter Turbidity is <1.0 mg/l