BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL

PRINCIPAL BENCH, NEW DELHI

ORIGINAL APPLICATION NO. 829/2019

IN THE MATTER OF:-

LT. COL. SARVADAMAN SINGH OBEROI **APPLICANT**

Vs.

UNION OF INDIA & ORS. **RESPONDENTS**

INDEX

(A. SUDHAKAR)
SCIENTIST -E
CENTRAL POLLUTION CONTROL BOARD
PARIVESH BHAWAN, EAST ARJUN NAGAR,
DELHI-110032

PLACE: DELHI
DATED: 11.03.2020

COMPREHENSIVE STATUS REPORT ON COASTAL POLLUTION SUBMITTED IN COMPLIANCE TO HON'BLE NATIONAL GREEN TRIBUNAL (NGT) ORDER DATED 03.12.2019 PASSED IN O.A. NO. 829/2019 IN THE MATTER OF LT. COL. SARVADAMAN SINGH OBEROI VS UNION OF INDIA & ORS.

1. Background

Hon'ble National Green Tribunal (NGT) in Original Application No. 829/2019 in the matter of Lt. Col. Sarvadaman Singh Oberoi Vs Union of India & Ors. passed order on 03.12.2019, a copy of which is enclosed as **Annexure –I**. Directions of Hon'ble NGT relevant to CPCB are reproduced below: -

Para No. 9

- *The report of CPCB is incomplete about the status of compliance with regard to norms of pollution laws in all the coastal areas in the country, particularly with regard to discharge of untreated and industrial and municipal effluents and solid waste. Accordingly, we direct CPCB to submit a comprehensive status report which regard to coastal pollution by way of classification of coastal areas in Priority-I to V as has been done for 351 polluted stretches within three months positively.*

Para No. 11

- *Accordingly, we direct that all the State PCBs/PCCs of coastal States/UTs may give the relevant information to CPCB within one month from today failing which defaulting Status/UTs will be liable to pay Rs. 10 lakhs per month till compliance.*

- *A copy of this order be sent to all the Chief Secretaries, State PCBs/PCCs of all Coastal States viz., Kerala, Tamil Nadu, Andhra Pradesh, Karnataka, Goa, Maharashtra, West Bengal, Odisha, Lakshadweep, Daman & Diu, Gujarat, Dadra and Nagar Haveli, Andaman and Nicobar, Puducherry and CPCB by email.*

2. Actions Initiated by CPCB

In pursuance to Hon'ble NGT order dated 03.12.2019, actions taken by CPCB in the afore-said matter are detailed below: -

2.1 CPCB communication sent to States/UTs: -

CPCB vide letter dated 13.12.2019 requested all the Coastal States/UTs (09 Coastal States & 04 UTs) to arrange to provide relevant information on municipal sewage, industrial effluent and waste management scenario in coastal areas through a questionnaire. A copy of the CPCB letter dated 13.12.2019 & the format circulated to the States/UTs is enclosed as **Annexure II.**

3. Responses received from States/UTs

In response to CPCB letter dated 13.12.2019, responses received from all 10 Coastal States and 3 UTs is given in tabular form in **Table.1** in next page.

Table 1. State-wise details on responses received

Sl. No.	Name of the States/UTs	Date of issuing of letter by CPCB	Response of States/UTs		No of major Towns/Cities in the Coastal States/UTs (As reported)
			Letter dated received from SPCB/PCC	Date of receipt of Information by CPCB	
1.	Andaman & Nicobar Islands	13.12.2019	3/1/2020	3/1/2020	03
2.	Andhra Pradesh		9/1/2020	15/1/2020	06
3.	Daman and Diu		7/1/2020	13/1/2020	02
4.	Goa		18/2/2020	18/2/2020	03
5.	Gujarat		18/2/2020 and 24.02.2020	18/2/2020 and 02.03.2020	30
6.	Karnataka		31/12/2019 and 13/01/2020	03/1/2020 and 21/01/2020	01
7.	Kerala		21/12/2019, 8/1/2020 and 02/03/2020	21/12/2019 13/1/2020 and 02/03/2020	25
8.	Lakshadweep		3/1/2020	27/1/2020	Nil
9.	Maharashtra		16/12/2019 and 6/1/2020	20/12/2019 and 6/1/2020	21
10.	Odisha		14/1/2020	14 and 21/1/2020	04
11.	Puducherry		31/12/2019	02/01/2020	04 (Districts)
12.	Tamil Nadu		31/12/2019	31/12/2019	21
13.	West Bengal		04/02/2020	10/02/2020	01
				Total	**121**

3.1 State –wise information w.r.t Control of Marine Pollution: -

Information as received from Coastal States /UTs has been tabulated and given as **Annexure-III to Annexure-VI.** State-wise details of information received is detailed in subsequent paras: -

3.1.1 Andaman & Nicobar Islands

Andaman & Nicobar Pollution Control Committee (A&N PCC) vide letter dated 3/1/2020 informed that Coastal Areas of Andaman & Nicobar has not been divided in to zones There are 3 major towns/cities present in the coastal areas and about 71 major drains outfall into Creek/Estuaries/Sea Water. As informed, there are no critically polluted areas in the UT. The Administration has engaged NEERI, Nagpur for studying the environmental degradation cost of pollution in the islands. The report from NEERI is expected in 06 months. Major industrial sectors present in the coastal areas are hotels and restaurants.

a) Status of Sewage Management Scenario in A&N Coastal Areas

As informed by A & N PCC, total sewage generation in the coastal areas of A & N Islands is about 14.175 MLD. 86 STPs with an installed capacity of 1.7 MLD are already commissioned and capacity utilization is 100 % at present. 22 out of 86 STPs have obtained Consent under Water (Prevention & Control of Pollution) Act, 1974, while 64 STPs yet to obtain Consent. All the existing 22 STPs are complying to CTO discharge norms and treated sewage Is also discharged into the coastal areas but not utilized for beneficial purposes. Actual total sewage treated in 86 STPs is 1.7 MLD and a total of 12.475 MLD of untreated sewage is being discharged into coastal water of A & N Islands. 3 STPs are presently under construction to ensure complete treatment of generated sewage.

b). Status on Industrial Effluent Management Scenario in Coastal Areas

As informed, there are 491 industries (Green: 208, Orange:2711and Red:12) located in the coastal areas of Andaman & Nicobar. Details w.r.t 17 categories Highly Polluting Industries, Grossly Polluting Industries (GPIs) and other water polluting industries present in the A & N Islands coastal areas have not been provided. Also, no information is provided on the total industrial effluent generated by the industries. 17 out of 491 industries are only having captive ETPs and no CETP is located in the coastal areas. Five captive ETPs are presently treating industrial effluent of 153 KLD and are complying with the effluent discharge norms. Details on treated and untreated effluent discharges in coastal areas have not been provided.

c). Waste management scenario in coastal areas

Hazardous waste (liquid) generated in the coastal areas is about 0.16KL. At present, no Hazardous Waste Treatment Storage and Disposal Facility (TSDF) existing. Bio-medical waste is generated at 43.514 MTA. 06 incinerators (total capacity 350Kg/hr), 07 biomedical shredders and 06 autoclaves are present. Municipal solid waste is generated at 43,800 MTA. There are 05 compost yards and 02 Dry waste resource centers present for segregation and transportation to mainland for recycling. Plastic waste generated is 1999 MTA. 02 Dry waste resource centers are present for segregation and transportation to mainland for recycling. The amount of e-waste generated is 0.5 MTA. At present, there is no treatment facility available. However, Port Blair Municipal Corporation (PBMC) has authorized an agency for collection and transportation of E-waste to mainland for recycling. The amount of C& D waste generation is 1 MTA. The C&D waste is collected on call basis through designated PBMC call center and stored in the custody of concerned engineering site office. Thereafter, the collected C&D waste is utilized for filling of low lying areas and maintenance works of roads (filling of potholes) etc.

d) Water quality of coastal waters

At present, there is no water quality monitoring (WQM) station present in coastal areas of A &N Islands. Water quality monitoring of the coastal waters of Radhanagar Beach in Swaraj Dweep (Havelock island) was carried out through M/s Envirocheck, 63/B, Rastraguru Avenue, Kolkata, West Bengal during the months of August, September and October 2019. As reported by A & N Islands, sea water quality monitoring carried out during Ganesh puja 2019 indicates pH (7.09-8), DO (5.3-6.8 mg/L), BOD (11.5-40 mg/L), COD (38.5-106 mg/L), Electrical Conductivity (40,205-60,162µmhos-cm), Turbidity (2.8-17.7 NTU), TDS (24735-37253 mg/L), TSS (28.2-95.7 mg/L), Chromium (<0.01 mg/L), Lead (<0.01 mg/L), Zinc (0.14-0.56 mg/L) and Copper (0.035-0.112 mg/L). During Durga Puja 2019, the results show pH (7.14-7.81), DO (5.3-6.8 mg/L), BOD (11.5-42 mg/L), COD (38.5-115 mg/L), Electrical Conductivity (34802-59261µmhos-cm), Turbidity (2.9-16.2 NTU), TDS (20,235-34,254 mg/L), TSS (373.3-161 mg/L), Chromium (<0.01-0.08 mg/L), Lead (<0.01-0.13 mg/L), Zinc (0.15-0.25 mg/L) and Cupper (0.029-0.24 mg/L). *Above results reveal that all the parameters complying to the water quality standards for coastal waters marine outfall for SW-II norms notified under the Environment (Protection) Rules, 1986 except Bio-Chemical Oxygen demand. The BOD values during Durga Puja and Ganesh puja were observed in the ranges of 11.5-42 mg/L and 11.5-40 mg/L respectively.*

f) Action taken report on CPCB directions dated.15.12.2016issued under section 18 (1) (b) of the Water (Prevention and Control of Pollution) Act, 1974 regarding treatment of untreated sewage and industrial effluent and disposal in coastal towns

As per the action taken report dated 01.01.2020, A & N Administration informed that (i) Port Blair Municipal Council (PBMC) is in the process of installing 42 KLD capacity Fecal Sludge Treatment Plant (FSTP) under Smart City mission; (ii) It has been made mandatory to install STPs/ETPs for all the hotels/resorts (having more than 20 rooms) as well as automobile service centers, as per the notification dated 22.09.2017, and (iii) sea water quality is being monitored through third party as mentioned above.

3.1.2. Andhra Pradesh

Andhra Pradesh Pollution Control Board (APPCB) vide letter dated 9/1/2020 informed that Coastal Areas of Andhra Pradesh has been distributed into four zones such as SW-I (Salt Pas, Shell Fishing, Mariculture AND Ecologically Sensitive Zone), SW-II (Bathing, Contact Water Sports and Commercial Fishing), SW-III (Industrial Cooling, Recreation) and SW-IV (Harbour). There are 6 major towns/cities present in the coastal areas of AP State and about 30 major drains outfall into AP Creek/Estuaries/Sea Water of Indian Ocean. As informed, there are two critically polluted areas located in the coastal areas, Visakhapatnam Bowl area and Vijayawada having CEPI score of 44.7 and 30.7,

respectively. Major industries located at Visakhapatnam Bowl area are Iron & Steel; Petro Chemical; Port activity; Fertilizers, whereas in Vijayawada, Thermal Power Plant and other industries are the major industries.

a) Status of Sewage Management Scenario in AP Coastal Areas

As informed by APPCB, in Andhra Pradesh coastal areas, total sewage generation is 310.50 MLD (i.e. Srikakulam Municipality-13 MLD; Kalingapatnam town -0.9 MLD; 214 MLD from ULBs (Greater Visakhapatnam Municipal Corporation (GVMC), Yelamanchilli Municipality & Narsipatnam Municipality) in Visakhapatnam District; Kakinada Municipal Corporation-55 MLD; Pitapuram Municipal Corporation, East Godavari District-5 MLD; Machilipatnam Corporation, Krishna District-11 MLD; Bapatla Municipality, Guntur District-5.6 MLD; Chirala Municipality, Prakasam District, Andhra Pradesh- 6 MLD). 16 STPs are situated in GVMC, Visakhapatnam, with an installed capacity of 165.50 MLD. All the 16 STPs have not obtained Consent under The Water (Prevention & Control of Pollution) Act, 1974. Actual total sewage treated in 16 STPs is about 100 MLD and the gap in sewage treatment in coastal areas of AP is 210.50 MLD. 2 STPs are presently under construction at GVMC, Visakhapatnam and Srikakulam Municipality, respectively to ensure treatment of generated sewage. *Both untreated and treated sewage about 310.50 MLD is discharged into coastal waters of AP. Also, information pertaining to two coastal districts viz., West Godavari and Guntur districts not provided by the APPCB.*

b) Status on Industrial Effluent Management Scenario in Coastal Areas

There are 1054 industries located in the coastal areas of Andhra Pradesh [(i.e. Srikakulam District (3), Vizianagaram District (3), Vishakhapatnam District (859); East Godavari District (83), Krishna District (43), Prakasam District (58), SPSR Nellore District (5)]. There are 132 number of 17 categories highly polluting industries present in the coastal areas (i.e. Srikakulam District-3 nos.; Vizianagaram District-2 nos.; Visakhapatnam District-119 nos.; East Godavari District-3 nos.; SPSR Nellore District-5 nos); 123 Nos. of Grossly Polluting Industries (GPIs) present in Visakhapatnam District. Total industrial effluent generated by the industries is about 2773.57MLD (i.e. Srikakulam district- 0.90 MLD; Vizianagaram district- 1.3145 MLD, Visakhapatnam District- 2735.37 MLD; East Godavari District- 14.28 MLD; Krishna District-0.013 MLD; Prakasam District-1.694 MLD; SPSR Nellore District-20 MLD). 176 industries are having captive ETPs, out of which 171 captive ETPs are complying to the effluent discharge norms (i.e. Srikakulam District-3 nos.; Vizianagaram District-3 nos.; East Godavari District-23 nos.; Prakasam District -12 Nos.). There are 3 CETPs having installed capacity of 25.07 MLD (i.e. 01 CETP is present at Parwada, Visakhapatnam, Andhra Pradesh (5 MLD - LTDs 3.5 MLD & HTDS- 1.5 MLD), another CETP, M/s Brandix India Apparel City Pvt. Ltd, APSEZ, Atchuthapuram (M), Visakhapatnam.,

Andhra Pradesh (20 MLD) and M/s. Machilipatnam Immitation Jewellery Park Pvt Ltd., 0.07 MLD (70 KLD). 164 industries are having membership of 3 CETPs and 130 industries have installed OCEMS. Total treated effluent discharged in coastal areas is about 2756.22 MLD (i.e. Srikakulam district- 0.90 MLD; Vizianagaram district- 1.3145 MLD, Visakhapatnam District- 2725.37 MLD; East Godavari District- 7.7 MLD; Prakasam District-0.938 MLD; SPSR Nellore District-20 MLD). APPCB have prescribed discharge standards for all the 3 CETPs.

c) Waste management scenario in coastal areas

Hazardous waste is generated in AP coastal areas is about 309560.8752 MTA. There are 02 Nos. of Hazardous Waste Treatment, Storage and Disposal Facilities (TSDFs) [viz., 1) M/s. Coastal Waste Management Project, (A division of M/s. Ramky Enviro Engineers Ltd.,) at JN Pharma City, Parawada, Visakhapatnam, Andhra Pradesh. (950000 MT); 2) M/s. Coastal Waste Management Project (CWMP), Unit: 2 (A Division of Mumbai Waste Management Limited), Raviguntapalli village, Rapur Mandal, Nellore District, Andhra Pradesh (95000 MT)]. Bio-medical waste generated in Coastal Areas is 1432.718 MTA and is disposed of through 9 Common Bio-medical Waste Treatment Facilities (CBWTFs). *Municipal solid waste is generated at 566780 MTA; plastic waste is generated at 21553.75 MTA, E-waste generation is 0.075 MTA, whereas C& D waste is generated at about 40432 MTA. However, details w.r.t Treatment and Disposal Facilities for management of these wastes not provided by the State.*

d) Water quality of coastal water

At present, water quality in AP Coastal Area under NWMP is monitored at 40 locations. As per latest sea water quality carried out for the period January to October 2019 at 09 locations in the coastal area indicates pH (7.27-7.77), D.O (4.0-25.9 mg/L), Salinity (7.7-30.33 mg/L), TSS (38-178 mg/L, COD (12-22 mg/L), BOD (1.5-4 mg/L), NO_3-N (0.56-5.79 mg/L), NH_3-N (0.04-2.72 mg/L), Inorganic PO_4^{3-} (0.03-1.90 mg/L), Cadmium (0.001-0.142 mg/L) and Lead (0.011-0.247 mg/L) and the results reveals that all the 9 monitored locations are complying with the Primary Water Quality Criteria for SW-IV norms notified under the Environment (Protection) Rules, 1986, except for BOD at confluence point of sewage of lavender canal joining the sea at harbor.

f) Action taken report on CPCB directions dated.15.12.2016issued under section 18 (1) (b) of the Water (Prevention and Control of Pollution) Act, 1974 regarding treatment of untreated sewage and industrial effluent and disposal in coastal towns

The action taken report on CPCB directions dated 15.12.2016 is annexed as **Annexure-VII**. Action taken report indicates that APPCB periodically issuing notices to

the ULBs to set up Sewage Treatment Plants (STPs) of adequate capacity including provision for sewerage system to cover the entire local/ urban areas and the treated effluent to comply with the Standards in order to prevent deterioration of surface, sub-surface and coastal waters. With regard to industrial effluents, APPCB is not permitting any industry to discharge their treated effluents into rivers/drains. The industries which are permitted with marine outfall system, have installed online continuous effluent monitoring system to verify the status of the treated effluent being discharged into sea which is connected to the CPCB/APPCB web site. The treated effluents are stored in guard ponds. The guard ponds outlet pumping is under lock & key facility. The treated effluents in the guard ponds are analyzed by APPCB officials for its compliance with Board norms and after ensuring that the treated effluents are complying with the marine discharge standards prescribed by the Board, the discharge into the sea is carried out in the presence of PCB Officials only.

3.1.3 Daman and Diu

Pollution Control Committee, Daman & Diu vide letter dated 7/1/2020 informed that coastal area is categorized into only one zone i.e., SW-II (Bathing, Contact Water Sports and Commercial Fishing) (near Moti Daman Jetty). There are 2 major cities/towns present in the Coastal areas and about 3 major drains outfall into Creek/Estuaries/Sea Water with the jurisdiction of Daman and Diu. As informed, there are no critically polluted areas in the UT.

a) Status of Sewage Management Scenario in Coastal Areas of Daman & Diu

As reported, total sewage generation in the coastal areas is about 11 MLD (i.e. Daman-7.5 MLD; Diu- 3.5 MLD). There is only 01 STP situated in coastal area, with an installed capacity of 4.21 MLD and is complying with the discharge norms. STP yet to obtain Consent under The Water (Prevention & Control of Pollution) Act, 1974. Actual total sewage treated in the existing STP is 1.5 MLD (Capacity Utilization is 35.63 %) and 9.5 MLD of untreated sewage is discharged into coastal water generated from Daman (6 MLD) and Diu (3.5 MLD). Gap in installed sewage treatment capacity in coastal areas at present is about 6.79 MLD. 2 STPs have been proposed to ensure treatment of generated sewage. No information provided with regard to the discharge standards stipulated for existing STPs.

b) Status on Industrial Effluent Management Scenario in Coastal Areas

There are 3547 industries located in the coastal areas of Damn and Diu and generating about 1.315 MLD Industrial Effluent. Only 97 out of 3547 industries having captive ETPs and all 97 industries reported to be complying with effluent discharge norms. There is no CETP located in the coastal areas of Daman & Diu. 3 industries have installed

OCEMS. *However, status w.r.t discharge of industrial effluent genertaed by 3450 industries not been provided which requires attention.*

c) Waste management scenario in coastal areas of Daman & Diu

Hazardous waste generated in the coastal areas of Daman & Diu is about 997.56 MTA. There is 01 Hazardous Waste Treatment, Storage and Disposal Facility existing [viz. 1) 01 Landfill site-2 Lakh MT/Annum; 01 Incinerator -12 MT/Day]. The Bio-medical waste generation is 90 MTA. At present, there is no Common Bio-medical Waste Treatment Facility (CBWTF). However, all the generated bio-medical waste is disposed of through M/s Enclear Biomedical Waste Pvt.Ltd., located at Surat in Gujarat. The quantity of municipal solid waste generated is 39600 MTA. Composting plant of capacity 100 MT/Day is operational. Remaining recyclable waste is disposed through authorized recyclers. In Diu, Municipal Solid Waste is being sent for co-processing directly from dump yard to Narmada Cement, Jafarabad Work, Gujarat. The amount of plastic waste generation is 1947.7 MTA. The generated plastic waste is disposed of through registered recyclers. The quantity of E-waste generation is 4.2 MTA. There are two authorized E-Waste recycling facilities Viz. 1) E-process House, Vapi, Gujarat; 2) Eco Green Recycling, Valsad, Gujarat. The quantity of C&D waste generation is 83 MTA. Presently, generated C&D waste is used for landfilling and recycled for manufacturing of Ready-mix concrete for paving purposes.

d) Water quality of coastal waters

At present, there is no sea water quality monitoring stations present in coastal area of Daman & Diu.

e) Action taken report on CPCB directions dated.15.12.2016issued under section 18 (1) (b) of the Water (Prevention and Control of Pollution) Act, 1974 regarding treatment of untreated sewage and industrial effluent and disposal in coastal towns

As per the information received from Pollution Control Committee, Daman & Diu, key points of ATR on CPCB directions indicates that (i) 01 STP already installed and 02 STPs are under proposal. (ii) No industrial units are permitted to discharge their effluent to coastal waters. All the wastewater generating industries were instructed to install adequate ETP and reuse the treated effluent within the premises, and (iii) Water quality monitoring of coastal waters, river Damanganga including estuary is not carried out by Daman & Diu PCC.

3.1.4 Goa

Goa State Pollution Control Board (GSPCB) vide letter dated 18/2/2020 informed that Coastal Areas of Goa has been distributed into one zone such as SW-II (Tiracol Beach,

Morjim Beach, Miramar Beach, Calangute Beach, Vagator Beach, Velso Beach, Colva Beach, Mobor Beach, Galgibag Beach and Baina Beach. There are 3 major towns/cities present in the coastal areas of Goa. Details w.r.t major drains outfall into Creek/Estuaries/Sea Water present in the coastal areas is not provided. As informed, there is no critically polluted area situated in coastal are of Goa. Major industries present in the coastal areas are Steel, Mining and Hotels.

a) Status of Sewage Management Scenario in Goa Coastal Areas

As reported, total sewage generation in the Goa coastal areas is 388 MLD. At present, 3 STPs are in operation in coastal area with an installed capacity of 20 MLD. 2 out of 3 STPs complying with the discharge norms. All the three STPs have not obtained Consent under the Water (Prevention & Control of Pollution) Act, 1974. Actual total sewage treated in 3 existing STPs is 20 MLD (100 % Capacity Utilisation) which is discharged into coastal areas. Gap in sewage treatment at present in coastal areas is about 368 MLD. 2 STPs are presently under construction to ensure treatment of generated sewage (proposed treatment capacity of 2 STPs is not provided). Goa State has prescribed sewage discharge norms for the STPs as recommended by CPCB.

b) Status on Industrial Effluent Management Scenario in Coastal Areas of Goa

There are Red (929), Orange (4266) and Green (2205) and 6 no. of 17 categories highly polluting industries located in the coastal areas of Goa. 209 industries are having captive ETPs. Among them, 207 Captive ETPs operating by industries complying with effluent discharge norms. About 3.47 MLD treated industrial effluent is discharged into coastal areas. As informed, no CETPs located in the coastal areas of Goa. So far, 10 industries have installed OCEMS, and 1 industry is yet to install OCEMS. However, GSPCB has not provided details w.r.t no. of industries and the total industrial effluent generation in the coastal areas of Goa State.

c) Waste management scenario in coastal areas

Hazardous waste generated in the coastal areas is about 28483.72 MTA. At present, there are no Hazardous Waste Treatment Storage and Disposal Facilities (TSDF) in the State. However, State is in the process of setting up of TSDF (with a provision of Secured Landfill -25,000 MTA; Incinerator 1.5 Tons/hr. Bio-medical waste generation is about 670.54 MTA. The Biomedical waste generated in the State of Goa is partly disposed in the incinerator facility of Goa Medical College as well as by individual HCFs through captive facilities such as encapsulated pit, deep burial pit after autoclaving and disinfection as applicable under Bio-Medical Waste Management Rules, 2016 as amended. The quantity of municipal solid waste generation is 235.35 MTA. Presently, MSW is treated at Saligao Plant (150 TPD) which is catering to 25 coastal panchayats

from North Goa, CCP, Mapusa. Other panchayats / Municipalities have their own facilities of composting, in home composting to single dwelling units. The quantity of plastic waste generation is about 4498 TPA. The total plastic waste collected is presently disposing by co-incineration to Karnataka, while the amount of E-waste generation is 60 MTA. The E-waste collected and transported to other states for recycling. As informed, there is no C& D waste is generated in Goa.

d) Water quality of coastal waters

There are 10 water quality monitoring (WQM) stations present in coastal areas. Water Marine water quality status report for January 2018 to October 2019 as provided by Goa SPCB reveals BOD (BDL to 3 mg/L) and complying with norms of SW-II notified under the Environment (Protection) Rules, 1986.

e) Action taken report on CPCB directions dated.15.12.2016 issued under section 18 (1) (b) of the Water (Prevention and Control of Pollution) Act, 1974 regarding treatment of untreated sewage and industrial effluent and disposal in coastal towns

Goa State has not provided ATR on CPCB directions dated 15.12.2016

3.1.5. Gujarat

Gujarat Pollution Control Board (GPCB) vide letter dated 18/2/2020 informed that Coastal Areas of Gujarat has been distributed into five different zones such as SW-I (Salt Pas, Shell Fishing, Mariculture and Ecologically Sensitive Zone), SW-II (Bathing, Contact Water Sports and Commercial Fishing), SW-III (Industrial Cooling, Recreation), SW-IV (Harbor) and SW-V (Navigation and Controlled Waste Disposal). There are 30 major towns/cities and 32 major drains outfall (sewage:13, Industrial:16 and others:03) into Creek/Estuaries/Sea Water in the coastal areas of Gujarat State. As informed, there is no critically polluted area situated in Gujarat coastal areas.

a) Status of Sewage Management Scenario in Coastal Areas of Gujarat

As reported, total sewage generation in the coastal areas is about 338.62 MLD. There 6 STPs situated in coastal areas with total installed capacity of 195.6 MLD and complying with the discharge norms. 4 out of 6 STPs have obtained Consent under Water (Prevention & Control of Pollution) Act, 1974, while 2 STPs have not obtained Consent. Actual total sewage treated in 6 STPs is about 111.3 MLD (Capacity Utilization is 56.9 %). Actual gap in installed sewage treatment capacity is about 143.02 MLD. 11 STPs (Capacity not provided) are presently under construction to ensure treatment of generated sewage. Total quantity of treated and untreated sewage discharged into

coastal areas 111.3 MLD and 227.32 MLD, respectively. GPCB has prescribed discharge norms for the STPs.

b). Status on Industrial Effluent Management Scenario in Gujarat Coastal Areas

There are 858 number of industries (Red:532, Orange:192 and Green:134) located in the coastal areas of Gujarat. There are 65 no. of 17 categories highly polluting industries, 3 Grossly Polluting industries (GPIs) and 327 other water polluting industries respectively in the coastal areas of Gujarat State. As reported, total industrial effluent generation is 1999.9 MLD. 427 out of 858 industries having captive ETPs out of which 423 captive ETPs are complying with the industrial effluent discharge norms. About 1886.47 MLD of treated industrial effluent is discharged in coastal areas. As informed, 2 CETPs located in the coastal areas of Gujarat with an installed treatment capacity of 17.5 MLD (i.e. Sarigam Clean Initiative (Sarigam) at Valsad-Sarigam- 12.5 MLD; CETP of Veraval Industries Association at Junagadh-5MLD) and 249 industries having membership of CETPs [Sarigam (153) and Junagadh (96)]. As per the information, 47 industries have installed OCEMS and 25 industries yet to install OCEMS. GPCB has prescribed discharge norms for the CETPs under Consent mechanism.

c) Waste management scenario in coastal areas of Gujarat

Hazardous waste generated in the Gujarat coastal areas is 310598.735 MTA and the generated hazardous waste is disposed of through Hazardous Waste Treatment Storage and Disposal Facilities (TSDFs) [viz. 1 TSDF at Bharuch (6,36,000 MT), 1TSDF at Alang, Bhavnagar (120000 MT), Disposed to common TSDF site and sell to registered recycler at Jamnagar and 114 at Navsari]. Bio-medical waste generation is 339 MTA and is disposed of through 4 CBWTFs located at Ankleshwar (Bharuch), Jamnagar, Navsari and Porbandar. There is no gap in treatment and disposal of both hazardous waste and bio-medical waste generated in the coastal areas of Gujarat.

Municipal solid waste generation is 193535.75 MTA. The MSW is disposed of through MSW facilities located at Jamnagar (capacity-25000 m^3/month), and the other at Navsari. Gap in MSW treatment and disposal is 50076.15 MTA. Plastic waste generation is 16346.385 MTA. Two plastic waste recycling facilities available at Jamnagar and 1 at Navsari. Gap in treatment and disposal of plastic waste is 3754.385 MTA. No information is provided by GPCB with respect to E-waste management. Total quantity of C&D waste generation is 9072.95 MTA. One facility is available at Navsari. Gap in treatment and disposal of C & D waste is 4474.45 MTA. *There is a need for development of adequate facilities for proper management of municipal solid waste, plastic waste, e-waste and C & D generated in the coastal areas of Gujarat*

d) Water quality of coastal waters of Gujarat

As informed vide letter dated 24.02.2020 (received on 02.03.2020), at present there are 40 coastal water quality monitoring stations present water quality of coastal water during the period January 2018 to December 2019 indicates BOD (0.43 to 0.79 mg/L) (coastal sample at Sarod), BOD (0.49 to 0.85 mg/L) (Estuarine sample at Sarod), BOD (2.94 to 6.04 mg/L) (Kutch West). The analysis results indicate that the BOD values is not complying to the SW-II criteria notified under the Environment (Protection) Rules, 1986 at Kutch West. During the years 2018 to 2020, observed average BOD (0.54 to 0.55 mg/L) (at Coastal Water at Dhuvaran) whereas observed average BOD (0.58 to 0.61 mg/L) (at Estuarine sample at Dhuvaran).

e) Action taken report on CPCB directions dated.15.12.2016 issued under section 18 (1) (b) of the Water (Prevention and Control of Pollution) Act, 1974 regarding treatment of untreated sewage and industrial effluent and disposal in coastal towns

As per the information received from GPCB, action taken report on CPCB directions dated 15.12.2016, showed that

- Gujarat Pollution Control Board have issued directions on 28.03.2017 and Notice of directions on 13.01.2015 &14.06.2017 to Veraval-Patan Joint Nagar Seva Sadan and Mangol Nagar Seva Sadan on 28.03.2017. Gujarat Board has issued,
- Legal notice Water Act-1974 on dtd.06/07/2019 for not providing STP & generated domestic sewage discharged without any treatment directly into sea, and to obtain Consents from Board.
- Legal notice under Water Act-1974 on dtd.25/09/2019 for not providing STP & generated domestic sewage discharged without any treatment directly into sea, to obtain consents from Board.
- Notice of Direction has been issued under Water Act-1974 dtd.06/01/2020 as per referring NGT judgment in the matter of O.A.No.593 and O.A.No.829 and CPCB letter dtd.01/10/2019.

Action taken report as submitted by GPCB is enclosed as **Annexure-VIII.**

3.1.6. Karnataka

Karnataka State Pollution Control Board vide letter dated 13.01.2020 informed that coastal areas of Karnataka has been distributed into five different zones such as SW-I (Salt Pas, Shell Fishing, Mariculture AND Ecologically Sensitive Zone), SW-II (Bathing, Contact Water Sports and Commercial Fishing), SW-III (Industrial Cooling, Recreation) SW-IV (Harbour).and SW-V (Navigation and Controlled Disposal). There is only one

Major town/city present in the coastal areas i.e. Mangalore and about 4 major drains outfalls into Creek/Estuaries/Sea Water of coastal areas in Karnataka. As informed, Baikampady Industrial Area & Other polluted areas had a CEPI score of 58.20. Major industries present in the coastal areas are Refinery, Petrol Chemical, Thermal Power Plant, Fish Processing & Chemical Industries.

a) Status of Sewage Management Scenario in Coastal Areas of Karnataka

As reported, total sewage generation in the coastal areas is about 95 MLD. There are 7 STPs situated in coastal area with an installed capacity of 103.25 MLD and are complying with the discharge norms. All 7 STPs have obtained Consent under Water (Prevention & Control of Pollution) Act, 1974. Actual total sewage treated in 7 STPs is 44.5 MLD a(Capacity Utilisation is only 43.1 %) and at present adequate sewage treatment capacity installed in coastal areas. 2 STPs are presently under construction (Capacity not provided). Karnataka SPCB already stipulated discharge standards for STPs. *Details w.r.t utilization of treated sewage not provided.*

b) Status on Industrial Effluent Management Scenario in coastal areas

There are 21 number of industries (Red :6, Orange:13 and Green:2) located in the coastal areas of Karnataka and generating 209 MLD of industrial effluent. There are 5 number of 17 categories highly polluting industries and no information is provided on Grossly Polluting Industries (GPIs) present in coastal areas of Karnataka. 18 out of 21 industries having captive ETPs. Among them, 14 captive ETPs operating by industries are complying with effluent discharge norms and 209 MLD of treated industrial effluent is discharged in coastal areas. 2 CETPs having 4.1 MLD treatment capacity are located in the coastal areas (i.e. at Ullal-0.6 MLD and at Mangalore SEZ- 3.5 MLD). 18 Industries are having membership of these two CETPs. Karnataka SPCB already stipulated effluent discharge standards for CETPs. As reported, 5 industries have installed OCEMS.

c) Waste management scenario in coastal areas of Karnataka

Hazardous waste generated in the coastal areas is 31594.37 MTA. At present, the hazardous waste generated in the coastal areas is sent to Hazardous Waste Treatment, Storage and Disposal Facility (TSDF) located within the Karnataka State for landfilling, various incinerators, co-processors & recyclers across the Karnataka State for further treatment & disposal. M/s MRPL Ltd., Kuthethur has got captive utilization facility for disposal of generated hazardous waste.

Bio-medical waste generation is 1135.55 MTA and is treated and disposed of through 3 Common Bio-medical Waste Treatment Facilities (CBWTFs) [viz. 1) M/s Ramky

Environmental & Energy (P) Ltd., Mulky, D.K. District-CBMWTF with 250 and 120 kg/hr incinerators; 2) M/s Ayush Enviro Tech Pvt Ltd. Udupi District-Incinerator capacity-200Kg/hr; and 3) M/s Kanara IMA Common Bio Medical Waste Treatment Facility, Ankola Taluk, Uttara Kannada District-Incinerator Capacity-50kg/hr)]

Municipal solid waste generation is 153,069 MTA and there are 7 landfill sites present for treatment and disposal. In Mangalore, gap in treatment and disposal of municipal solid waste is 131 TPD. At Udupi- 2 ULB's have identified sites in which one site is under establishment and another site is under litigation. There is a proposal to enhance the treatment facility for remaining solid waste disposal generated from the ULB's.

Plastic waste is generated at 8193.75 MTA. There are 4 plastic waste recycling industries (i.e. 2 each in Udupi & Mangaluru jurisdiction) available in the coastal areas. These wastes are channelized for recycling and non-recyclable low calorific value plastic waste are land filled. E-waste generation is at 4673.19 MTA. The E-waste collected at designated E-waste collection centers & handed over to authorized E-waste recyclers. C&D waste generation is 6363 MTA. *At present, no dedicated treatment and disposal facility is available in the coastal areas of Karnataka for management of generated C & D Waste. However, temporary facilities arranged within SWM Landfill site for storage of generated C&D waste.*

d) Water quality of coastal waters

There are 2 coastal water quality monitoring stations present in coastal areas, which are monitored by Karnataka SPCB. Coastal water quality status report at Panambur beach for the period April 2018- October 2019 indicates for the parameters pH (6.9-7.4), BOD (1 - 2 mg/L), Oil and Grease (BDL), Suspended Solids (10-68 mg/L), DO (6.5 to 6.9 mg/L), Turbidity (1 mg/L) whereas at Chitrapura Beach had pH (6.9-7.5), BOD (1 - 2 mg/L), Oil and Grease (BDL), Suspended Solids (10-54 mg/L), DO (6.5 to 7 mg/L), and Turbidity (1 mg/L). The analysis report reveals that the coastal water quality at Panambur beach and Chitrapura beach is complying with the Primary Water Quality Criteria norms of SW-II notified under the Environment (Protection) Rules, 1986.

e) Action taken report on CPCB directions dated.15.12.2016 issued under section 18 (1) (b) of the Water (Prevention and Control of Pollution) Act, 1974 regarding treatment of untreated sewage and industrial effluent and disposal in coastal towns

As per the information received from Karnataka, the action taken report on CPCB directions dated 15.12.2016, key initiatives revealed from ATR that Karnataka Board is issuing consents to the industrial units only after ensuring that the units have provided ETP of adequate capacity and these units are periodically monitored. The urban local

bodies located along the coast line are Viz. 1) Mangalore City Corporation, 2) CMC Ullal, 3) TP Mulki, 4) CMC Udupi, 5) TMC Kaup, 6) TMC Kundapura, 7) TP Saligrama, 8) TMC Bhatkal, 9) TP Honavar, 10 TMC Kumta, 11) TMC Ankola and 12) CMC Karwar. The tertiary treated sewage of Mangalore city corporation (MCC) is partially being used for industrial purpose by M/s MRPL industry (22.7% of total treated sewage) and for gardening purpose by Pilikula Nisarga Dhama (14%). Further, Karnataka Pollution Control Board has brought the residential apartments and commercial establishments under consent mechanism and is insisting these establishments to provide STPs. There are 13 numbers of fish meal industries (cluster) located at Ullala having CETP to treat the trade effluent generated from their member units and imposed condition in the consent to discharge treated effluent into the sea after confirming to the standards. KSPCB shall provide the water quality monitoring data of coastal water carried out either by SPCB or any other organizations/laboratory. Detailed district environmental plan (DEP) have been prepared individually for each district. Detailed ATR of Karnataka SPCB is enclosed as **Annexure-IX.**

3.1.7 Kerala

Kerala Pollution Control Board vide letter dated 8/1/2020 submitted information. Further, Kerala SPCB submitted revised information vide letter dated 02.03.2020. As per the revised information it was informed that coastal areas of Kerala have been distributed into five different zones such as SW-I (Salt Pas, Shell Fishing, Mariculture and Ecologically Sensitive Zone), SW-II (Bathing, Contact Water Sports and Commercial Fishing), SW-III (Industrial Cooling, Recreation), SW-IV (Harbor) and SW-V (Navigation and Controlled Waste Disposal). There are 25 major towns/cities present in the Coastal Areas and 43 major drain outfall into Creek/Estuaries/Sea Water within the jurisdiction of the Kerala coastal areas, information not provided. There are no critically polluted areas located in the coastal areas of Kerala State. The CEPI score of Greater Kochi is 52 (non-critical). The major industrial areas/estates in the Greater Kochi coastal area are Angamaly, Eloor, Edayar, S. Klamassery, Erumathala, Kinfra Park, Kalamassery, CSEZ, Kakanad, Ambalamugal, Kinfra, and Kakkanad.

a) Status of Sewage Management Scenario in Coastal Areas of Kerala

In Kerala State, total sewage generation in the coastal areas is 81.91 MLD. There are 113 STPs with an installed capacity of 7.088 MLD. All the 111 STPs have obtained Consent under The Water (Prevention & Control of Pollution) Act, 1974. Actual total sewage treated in 113 STPs is 6.4133 MLD. Kerala SPCB informed that 35 out of 113 STPs are complying to discharge norms. Proposed 2 STPs of capacity 13 MLD (6 MLD at Kothi and 7 MLD at Avikkal). Kerala SPCB already stipulated discharge norms for STPs. *Kerala State Pollution Control Board also claims that there is no discharge of untreated sewage takes places into sea waters as 97% of the rural households and 99% of the urban households have septic tank facilities.*

b) Status on Industrial Effluent Management Scenario in coastal areas

There are 495 major industries located in the coastal areas of Kerala and 302 industries are having captive ETPs and all captive ETPs are complying with the industrial effluent discharge norms. There are 5 number of 17 categories highly polluting industries and 2 Grossly Polluting Industries (GPIs) and 259 other water polluting industries present in the coastal areas. 6.602 MLD total generated industrial effluent is treated and disposed into coastal areas. About 0.521 MLD gap in industrial effluent treatment. At present, no CETP exist in the coastal areas of Kerala State. As reported, no untreated industrial effluent is discharged into coastal areas. 8 Industries have installed OCEMS, and 15 industries yet to install OCEMS.

c) Waste management scenario in coastal areas of Kerala

Hazardous waste generated in the coastal areas of Kerala is 5713.708 MTA. At present, the hazardous waste generated in the coastal areas is sent to one Hazardous Waste Treatment, Storage and Disposal Facility (TSDF) located in the Kerala State. Total Capacity of the SLF in TSDF located in Kerala is 10 Lakh Tons. Bio-medical waste generation in coastal areas is 28.501 TPA and is treated and disposed of through a Common Bio-medical Waste Treatment Facility located in the State (capacity: 37.5 TPD).

As informed, municipal solid waste generation is 25029.14 TPA and is disposed of through 2 MSW Plans located at Brahmapuram (Capacity-300 TPD) and Kozhikkode-Window Composting Plant Capacity 100 TPD). Certain % of solid waste is seen dumped in some part in Kerala coastal area. Action is being taken to manage such waste as per SWM Rules, 2016. Kerala State has not provided information relating to Plastic waste, E-Waste as well as C & D Waste management scenario in the State.

d) Water quality of coastal waters

There are 5 coastal water quality monitoring stations as per Blue Flag Certification of Kappad Beach and is monitored by Kerala SPCB. On 10/02/2020, at Kanhangad, the analysis results showed pH (7.29), Turbidity (3.1 NTU), BOD (1.96 mg/L), DO (6.8 mg/L), Faecal Coliform (180 MPN/100 ml). On 14/02/2020 at Kumbala, the values showed pH (7.86), BOD (2.12 mg/L), DO (7.2 mg/L), Faecal Coliform (280 MPN/100 ml).

At Ernakulum, on 19/12/2019, the analysis results of five samples showed pH (7.9 -8), BOD (1.3 -1.9 mg/L), Turbidity (5 -10 NTU), DO (6.3 -6.8 mg/L), Faecal Coliform (Nil-100 MPN/100 ml). On 21/12/2019, the analysis results of five samples showed pH (7.9 -8), BOD (1.3 -1.9 mg/L), DO (6.3 -6.8 mg/L), Faecal Coliform (Nil-100 MPN/100 ml). On

26/12/2019, the analysis results of five samples showed pH (7.6 -7.9), BOD (1.2 -1.9 mg/L), DO (5.9 -6.9 mg/L), Turbidity (12 to 27 NTU), Faecal Coliform (Nil-104 MPN/100 ml) whereas on 03/01/2020, analysis results of five samples showed pH (7.5 to 7.8), BOD (1.3 -1.9 mg/L), DO (6.3 -6.9 mg/L), Turbidity (2 to 18 NTU), Faecal Coliform (Nil-265 MPN/100 ml)

Above analysis results reveal that coastal water quality at Kanhangad (on 10/02/2020), Kumbala (on 14/02/2020), Ernakulum, beaches (on 26/12/2019, 03/01/2020) are not complying to the notified SW-II Criteria (SW-II) w.r.t Faecal Coliform.

e) Action taken report on CPCB directions dated.15.12.2016 issued under section 18 (1) (b) of the Water (Prevention and Control of Pollution) Act, 1974 regarding treatment of untreated sewage and industrial effluent and disposal in coastal towns

Kerala State Pollution Control Board informed that issuing directions, if violations noticed as and when.

3.1.8 Lakshadweep

Lakshadweep Pollution Control Committee (LPCC) vide letter dated 3/1/2020 informed that Coastal Areas of Lakshadweep has been distributed into one zone i.e. SW-II (Bathing, Contact Water Sports and Commercial Fishing). As reported, there are no major towns/cities and major drains outfall into Creek/Estuaries/Sea Water present in the Coastal Areas. As reported, there are no critically polluted areas located in the coastal areas of Lakshadweep.

a) Status of Sewage Management Scenario in Coastal Areas

As reported, in Lakshadweep, total sewage generation in the coastal areas is 7 MLD. One (01) STP situated in coastal area (Bangaram Island Resort) with an installed capacity of 8 KLD and complying with the discharge norms. The STP has obtained consent under the Water (Prevention & Control of Pollution) Act, 1974. Actual total sewage treated in STP is 8 MLD (100 % Capacity Utilization). *Lakshadweep PCC claims that no treated or untreated sewage is discharged into coastal water, although 0.008 out of 7 MLD generated sewage is treated by the existing 1 STP.*

b) Status on Industrial Effluent Management in coastal areas

As reported, there are no industries located in the coastal areas of Lakshadweep. Hence, no further information on the industries or industrial effluent is provided.

c) Waste management scenario in coastal areas

Hazardous waste generated in the coastal areas except 48 MTA of used oil. There is no Hazardous Waste Treatment Storage and Disposal Facility in Lakshadweep and proposed to transport the same to one of the authorized recyclers in Mangalore. Bio-medical waste generation is 123 Kg. There are 10 needle destroyers, 03 autoclaves and 02 incinerators are present for treatment and disposal of Biomedical waste. Municipal solid waste generation is 1200 MTA. There are 01 Coconut leaf Shredder (50kg/hr), (01) Bio Composter machine (250 Kg/hr) and one (01) Bio gas plant (36 Kg/hr). The Non bio-degradable wastes are collected, segregated and transported to recyclers at mainland. The biodegradable wastes are disposing through composting and biogas plants. Plastic waste generation is 153 MTA. There is 1 incinerator and 1 plastic shredder (50 Kg/hr) at present. The installation of treatment facilities in the remaining islands are under progress. *The inventory of E-waste generation is under progress. There is no dedicated E-Waste treatment and disposal Facility in Lakshadweep and proposed to transport the same to one of the authorized recyclers in Mangalore.* C&D waste generation is 50 MTA. All the C&D wastes are re-using for filling foundation of the new constructions.

d) Water quality of coastal waters of Lakshadweep

Information not provided on marine water quality monitoring (WQM).

e) Action taken report on CPCB directions dated.15.12.2016 issued under section 18 (1) (b) of the Water (Prevention and Control of Pollution) Act, 1974 regarding treatment of untreated sewage and industrial effluent and disposal in coastal towns

Action taken report on the CPCB directions dated 15.12.2016 is not furnished by the UT.

3.1.9 Maharashtra

Maharashtra Pollution Control Board (MPCB) vide letter dated 16/12/2019 & 6/1/2020 informed that coastal area of Maharashtra has been distributed into five different zones i.e., SW-I (Salt Pas, Shell Fishing, Mariculture AND Ecologically Sensitive Zone), SW-II (Bathing, Contact Water Sports and Commercial Fishing), SW-IV (Harbor) and SW-V (Navigation and Controlled Waste Disposal). There are 21 major towns/cities in the Coastal Areas and about 6 major drains outfall into Creek/Estuaries/Sea Water within the jurisdiction of the Maharashtra State. As informed, there are five critically polluted areas located in the coastal areas. The name of the critically polluted area and the CEPI score of the areas are Tarapur (93.6), Dombivali (69.67), Navi Mumbai (66.32), Chembur (54.6) and Mahad (47.12). The major industrial sectors present in the coastal areas are chemical, textile and petroleum.

a) Status of Sewage Management Scenario in Coastal Areas of Maharashtra

As reported, in Maharashtra, total sewage generation in the coastal areas is about 4133.99 MLD. There are 42 STPs situated in coastal areas, with an installed capacity of 3946.54 MLD and all the STPs are complying with the discharge norms. All 42 STPs have obtained Consent under the Water (Prevention & Control of Pollution) Act, 1974. Actual total sewage treated in 42 STPs is 3197.2 MLD (Capacity Utilization 81.03 %) and is being discharged into coastal areas. Gap in actual sewage treatment capacity in coastal areas is 187.45 MLD. 31 STPs of capacity 3197.2 MLD are presently under construction to ensure treatment of generated sewage. About 936.79 MLD of untreated sewage & 3197.2 MLD of treated sewage is presently discharged into coastal waters. Maharashtra State has already prescribed standards for STPs. *There is a need for utilization of treated sewage for beneficial purposes such as agricultural/ industrial/ construction etc.*

b) Status on Industrial Effluent Management Scenario in coastal areas

As informed, there are 41455 number of industries (Green: 16169, Orange: 10392, Red: 11488, White:3406) located in the coastal areas of Maharashtra. 103 number of 17 categories highly polluting industries present in the coastal areas. Total industrial effluent generated is 233.4 MLD. 4138 out of 41455 industries having captive ETPs and among them, 3852 nos. of captive ETPs operating by industries are complying with effluent discharge norms. There are 13 CETPs in the coastal areas with an installed capacity of 163.55 MLD and 6523 industries having membership of CETPs. Maharashtra PCB has prescribed standards for CETPs. As per the information received from the State, 450 industries and 13 CETPs have already installed OCEMS.

c) Waste management scenario in coastal areas of Maharashtra: -

Hazardous waste generated in the coastal areas is about 669966.23 MTA. There are 02 Hazardous Waste Treatment Storage and Disposal Facilities (TSDFs) (viz. 1) Mumbai Waste Management Ltd-Plot No P-32 & Part, Taloja MIDC, Panvel-Raigad,410 208 Capacity: Secured Landfill - 1,20,000 MT/ Year, Incineration – 1.5 MT /hr x 2; 2) Trans Thane Creek Waste Management Association, P-128, TTC Indl. Area, Near L&T Infotech, Shil Mahape Road, Mahape, Navi Mumbai. 400710. Capacity: Secured Landfill - 21,600 MT/Year). Bio-medical waste generation is 9930 MTA. There are 8 CBWTFs (i.e., Capacity of Incinerator-10019 MTA and Autoclave-25112 MTA). At present, there is no gap in treatment and disposal of both Hazardous Waste and Bio-medical Waste.

Municipal solid waste generation is 4655943.65 MTA. There are 50 Treatment and Disposal Facilities with a capacity of 2376588 MTA. Gap in Treatment and Disposal of municipal solid waste is about 2279355.65 MTA. Plastic waste generation is about 110778.82 MTA. There are 71 plastic waste recycler with a capacity of 109074 MTA

and the gap in Treatment and Disposal Facilities of plastic waste is about 92432.35 MTA. E-waste generation in Maharashtra coastal areas is about 197491.03 MTA. There are 36 E-Waste Recyclers present with a capacity of 41450 MTA. The gap in Treatment and Disposal of E-waste is 191,023.6 MTA. C& D waste is generation is about 13,76,582.86 MTA. Only one C & D Facility is present in the coastal areas having capacity of 300 MTD. The gap in Treatment and Disposal of C&D waste is 13,50,338.285 MTA.

d) Water quality of coastal waters

There are 36 water quality monitoring (WQM) stations present in coastal area. Water Quality Status report for the year January 2018 to October 2019 indicates average concentration of the parameters pH (7.1 to 7.7), BOD (2.4-46.2 mg/L), COD (38.4 -256 mg/L), DO (3.6- 6.4 mg/L), Nitrate-N (0.9-3.3mg/L), FC (8.7 to – 888 MPN/100 ml.) and Total Coliform (75.3-1396 MPN/100 ml).

e) Action taken report on CPCB directions dated.15.12.2016 issued under section 18 (1) (b) of the Water (Prevention and Control of Pollution) Act, 1974 regarding treatment of untreated sewage and industrial effluent and disposal in coastal towns

Maharashtra PCB vide letter dated 16.12.2019 informed that (i) MPCB has issued directions to all the local bodies including coastal areas to submit the time bound action plan for 100 % treatment of the generated sewage and achieving effluent discharge standards for STPs, (ii) Directions issued to all the local bodies, why the MC shall not be levied by MPCB the maximum amount of EC in compliance to Hon'ble NGT order dated 28/08/2019 passed in OA No. 593/2017; (iii) All the District Magistrates including coastal areas has been instructed to prepare District Environmental Plan.

Action taken report as received from Maharashtra PCB is annexed **(Annexure-X)**

3.1.10 Odisha

State Pollution Control Board, Odisha vide letter dated 14/1/2020 informed there are 4 major towns/cities in the Coastal Areas and about 2 major drains outfalls into Creek/Estuaries/Sea Water. Information on the status of critically polluted in coastal areas of Odisha not provided by the State.

a) Status of Sewage Management Scenario in Coastal Areas of Odisha

As informed, total sewage generation in the coastal areas is 26.5 MLD. There are 4 STPs situated in coastal areas with an installed capacity of 24 MLD and these STPs are

complying with the discharge norms. 4 STPs have not obtained Consent under the Water (Prevention & Control of Pollution) Act, 1974. Actual total sewage treated in 4 STPs is 24 MLD (100 % Capacity Utilisation) and having gap in sewage treatment is 2.5 MLD. Treated sewage is discharged into coastal areas. 1 STP of capacity 2.5 MLD is presently under construction to ensure treatment of generated sewage. SPCB, Odisha has prescribed discharge standards for STPs. *There is a need for utilization of treated sewage for beneficial purposes by the Odisha State Govt.*

b) Status on Industrial Effluent Management Scenario in coastal areas

As informed there are 16 industries (all red category) located in the coastal areas of Odisha, 6 number of 17 categories highly polluting industries (including 3 GPIs) present in the coastal areas, 3 Grossly Polluting Industries (GPIs) and 10 other water polluting industries. Total industrial effluent generated by the industries is 16.68 MLD. 10 out of 16 industries are having captive ETPs and complying with industrial effluent discharge norms. About 16.48 MLD of treated industrial water is also discharged into coastal areas. 06 Nos. of industries have installed OCEMS. However, details w.r.t 6 industries regarding management of generated industrial effluent not provided by the Odisha State.

c) Waste management scenario in coastal areas

Hazardous waste generated in the coastal areas is about 668798 TPA. There is one TSDF. Gap in Hazardous Waste Treatment and Disposal is 9397 TPA. Bio-medical waste generation is 197.5 TPA. 82 Health Care Facilities are having captive treatment facilities. Municipal solid waste generation is 4686 TPA. The capacity of MSW Facility is 4104 TPA. Gap in Treatment and Disposal of MSW is 582 TPA. Plastic waste generation is 35.56 MTA. E-waste generation is 15.18 MTA. C& D waste generation is 44668 MTA. There are no Treatment and Disposal Facilities for plastic waste as well as C&D waste.

d) Water quality of coastal waters

There are 03 water quality monitoring (WQM) stations present in coastal areas of Odisha. Coastal water quality status report during the year 2018 observed values of BOD (0.7-2.8 mg/L) at Puri, (0.8-2.3 mg/L) at Gopalpur and (0.3-2.4 mg/L) at Pradeep. In the year 2019, the BOD values are in the ranges of (0.2-1.6 mg/L) at Puri, at Gopalpur (0.3-2.5 mg/L) and at Pradeep (0.3-1.4 mg/L) and complying with the SW-II norms notified under the Environment (Protection) Rules, 1986

f) Action taken report on CPCB directions dated.15.12.2016 issued under section 18 (1) (b) of the Water (Prevention and Control of Pollution) Act, 1974 regarding treatment of untreated sewage and industrial effluent and disposal in coastal towns

As per the information received from Odisha, main points of ATR on CPCB directions, 15.12.2016 revealed that (i) State Pollution Control Board, Odisha has intimated to all the Executive Officers, vide letter No.13281 dated 06.12.2019 and vide letter No. 13234 dated 5.12.2019 to ROs, SPCB, Odisha and letter No. 13013 dated 02.12.2019 to all the industries, to develop adequate treatment facilities and not to discharge any untreated industrial effluent/sewage into nearby water bodies/coastal waters.

3.1.11 Puducherry

Puducherry Pollution Control Committee (PPCC) vide letter dated 31/12/2019 informed that Coastal Areas of Puducherry has been distributed into two zones i.e., SW-II (Bathing, Contact Water Sports and Commercial Fishing) and SW-IV (Harbor). There are 04 major districts (5 municipalities, 3 towns) in the Coastal Areas and about 14 major drains outfall into Creek/Estuaries/Sea Water. As informed, there are no critically polluted areas located in the coastal areas.

a) Status of Sewage Management Scenario in Coastal Areas of Puducherry

As informed, total sewage generation in the coastal areas is 58 MLD. 03 STPs situated in coastal areas with an installed capacity of 68.5 MLD and complying with discharge norms. All 3 STPs have obtained consent under the Water (Prevention & Control of Pollution) Act, 1974. Actual total sewage treated in 3 STPs is 40 MLD (Capacity Utilisation is 58.4 %) and 18 MLD of generated sewage is untreated. Underground sewerage network establishment is under progress to achieve 100% household connectivity which will avoid discharge of untreated sewage through drainage canals. PPCC has prescribed effluent discharge standards for the STPs. At present, no quantification is done for the quantity of untreated sewage discharged into coastal water.

b). Status on Industrial Effluent Management Scenario in coastal areas

As informed, 05 number of industries located in the coastal areas of Puducherry. There are 04 number of 17 categories highly polluting industries which includes 03 Grossly Polluting Industries (GPIs) present in the coastal areas of Puducherry. Total industrial effluent generated by the industries is 0.012 MLD. 4 out of 5 industries have captive ETPs and all 4 captive ETPs are complying with effluent discharge norms. The amount of treated effluent discharged in coastal areas is 0.012 MLD. All 5 industries have installed OCEMS.

c) Waste management scenario in coastal areas

Hazardous waste generated in the coastal areas is about 38045 MTA. The waste sent to neighboring states for treatment and disposal of waste. There is 38% of gap in Treatment and Disposal Facilities are reported by Puducherry Pollution Control Committee. Bio-medical waste generation is about 1576.8 MT and is treated and disposed of through 01 CBWTF available with a capacity of 10 TPD in Puducherry State. Municipal solid waste generation is about 218635 MTA. There are 03 MSW Treatment and Disposal Facilities available with a capacity of 324 TPD. Plastic waste generation is about 8433 MTA. Puducherry Pollution Control Committee has informed that Government G.O. on ban on plastics from 02.08.2019 onwards. E-waste generation is 62.5 MTA, which is sent to neighboring States for treatment and disposal. C & D waste generation is 16169 MTA. No details provided with regard to the treatment and disposal facilities of C & D waste.

d) Water quality of coastal waters

As informed, at present there is no water quality monitoring (WQM) stations under NWMP present in coastal area. Water Quality Status report for 2019 (Jun-Oct) showed that the observed values at Eden Beach are pH (7.91 -8.17), DO (4.8-5.3 mg/L) and Turbidity (1.5-3.4 NTU). In case of Chinnaveerampattinam beach, pH (7.94-8.06), DO (6.8-6.9 mg/L) and Turbidity (9.7-12.1 NTU). At both the beaches, both FC and BOD are observed as 'BDL'.

f) Action taken report on CPCB directions dated.15.12.2016 issued under section 18 (1) (b) of the Water (Prevention and Control of Pollution) Act, 1974 regarding treatment of untreated sewage and industrial effluent and disposal in coastal towns

PPCC vide letter dated 14.01.2020 informed that the Direction has been issued to PWD on 06.01.2017 to comply with the direction of CPCB dated 15.12.2016. A copy of the action taken report submitted by PPCC is annexed **(Annexure-XI).**

3.1.12 Tamil Nadu

Tamil Nadu Pollution Control Board (TNPCB) vide letter dated 31/12/2019 informed that Coastal Areas of Tamil Nadu has distributed into five zones i.e., SW-I (Salt Pas, Shell Fishing, Mariculture and Ecologically Sensitive Zone), SW-II (Bathing, Contact Water Sports and Commercial Fishing), SW-III (Industrial Cooling, Recreation), SW-IV (Harbour) and SW-V (Navigation and Controlled Waste Disposal). There are 21 Major towns/cities in the Coastal Areas and about 8 major drains outfall into Creek/Estuaries/Sea Water. As informed, there are two critically polluted areas located in the coastal areas, one is Cuddalore having CEPI score 62.56 and Thoothukudi

having CEPI score of 66.34. The major industries present in the coastal area are Thermal Power Plant, Fertilizers and Sea ports.

a) Status of Sewage Management Scenario in Coastal Areas of Tamil Nadu

As informed by Tamil Nadu Pollution Control Board, total sewage generation in the coastal areas is about 597.77 MLD. There are 15 STPs situated in coastal area with an installed capacity of 761.18 MLD. 12 out of 15 STPs have obtained Consent under Water (Prevention & Control of Pollution) Act, 1974 and complying with the discharge norms, while 3 STPs have not obtained Consent under Water (Prevention & Control of Pollution) Act, 1974. Actual total sewage treated in 15 STPs is 550.25 MLD (Capacity Utilization is 72.29 %) and there is excess sewage treatment installed capacity in coastal areas. 4 STPs are presently under construction (Capacity details not provided). TNPCB has prescribed discharge norms for STPs. As informed, about 47.52 MLD of untreated sewage and 20.25 MLD of treated sewage discharged into coastal waters within the jurisdiction of the Tamil Nadu State.

b) Status on Industrial Effluent Management Scenario in coastal areas

There are 246 number of industries located in the coastal areas of Tamil Nadu (Red-76, Orange-179). 17 Number of 17 categories highly polluting industries and 205 other water polluting industries present in the coastal areas. Total industrial effluent generated by the industries is 21.849 MLD. There are 493 industries having captive ETPs. 465 out of 493 having captive ETPs complying with effluent discharge norms. Total treated industrial effluent discharged in coastal areas is 21.779 MLD. 1 CETP at Madhavaram is located in the coastal area with an installed capacity of 0.4 MLD and 173 industries having membership of CETP. TNPCB has prescribed effluent discharge norms for captive ETPs as well as CETP. 53 industries have installed OCEMS and 03 industries yet to install OCEMS.

c) Waste management scenario in coastal areas

Hazardous waste generated in the coastal areas is about 48.053 MTA, which is treated and disposed of through TSDFs available in Tamil Nadu. Bio-medical waste generation is about 656.364 MTA and is disposed of through CBWTF having capacity 10 TPD. Municipal solid waste generation is 1806.117 MTA. 30 Nos. of MSW Disposal Facilities are existing. Plastic waste generation is about 160.779 MTA. At present there are 02 Plastic waste recycling facilities exist. E-waste generation is about 0.242 MTA. The gap in treatment and disposal of E-waste is 1 MTA.

d) Water quality of coastal waters

At present there is no water quality monitoring (WQM) stations present in coastal area. TNPCB in association with NCCR, Chennai, planning for sea water quality monitoring.

e) Action taken report on CPCB directions dated.15.12.2016 issued under section 18 (1) (b) of the Water (Prevention and Control of Pollution) Act, 1974 regarding treatment of untreated sewage and industrial effluent and disposal in coastal towns

TNPCB vide letter dated 31.12.2019 that (i) 11 No of STPs provided for Chennai Corporation. Capacity-735 MLD, (ii) Mamallapuram Town has also provided STP, (iii) Installation of STP under progress in Thoothukudi for 27 MLD, (iv) Tiruchendur Town has also provided STP. (v) Tamil Nadu Pollution Control Board has prescribed the conditions and stipulated the standards for the marine disposal of sewage and trade effluents, (vi) No Water Quality monitoring arrangement is done. However, Marine Water quality is monitored by TNPCB at Cuddalore every three months. In other coastal areas industries have been directed to monitor the quality of marine water regularly.

1.5.13 West Bengal

West Bengal Pollution Control Board (WBPCB) vide letter dated 4/2/2020 informed that Coastal Areas of West Bengal falls under a single zone i.e. SW-I (Salt Pas, Shell Fishing, Mariculture and Ecologically Sensitive Zone). There are 1 major town/city i.e. Digha in the coastal area and about 1 major drain outfall into Creek/Estuaries/Sea Water. As informed, there are no critically polluted areas located in the coastal areas.

a) Status of Sewage Management Scenario in Coastal Areas of West Bengal

As informed, total sewage generation in the coastal areas of West Bengal is 2 MLD. One STP is situated in coastal area with an installed capacity of 6.7 MLD and complying with the discharge norms. The STP has obtained Consent under the Water (Prevention & Control of Pollution) Act, 1974. Actual total sewage treated in the existing one STP is 02 MLD (29.85 % capacity utilization) and treated sewage is discharged into coastal areas. No gap in sewage treatment is observed in the coastal areas of West Bengal. WBPCB has prescribed discharge standards for STPs.

b) Status on Industrial Effluent Management Scenario in coastal areas

There are no industries present in the coastal areas of West Bengal. Hence, no information on industries and industrial effluent is provided by the State.

c) Waste management scenario in coastal areas

As per the information furnished by West Bengal Pollution Control Board, there is no hazardous waste, municipal solid waste, plastic waste, e-waste and C&D waste is generated in the coastal areas. Only 4.75 MTA of bio-medical waste is generated which is collected and treated through a Common Bio-medical Waste Treatment and Disposal

Facility located at Haldia. Use of plastic carry bags is completely banned in Digha coastal areas.

d) Water quality of coastal waters

As informed by WBPCB, only one ground water monitoring station recently sanctioned by CPCB. The Ground water quality monitoring will be done in April, 2020. Marine water quality is not monitored by the WBPCB.

f) Action taken report on CPCB directions dated.15.12.2016 issued under section 18 (1) (b) of the Water (Prevention and Control of Pollution) Act, 1974 regarding treatment of untreated sewage and industrial effluent and disposal in coastal towns

WBPCB vide letter dated 04.02.2020 informed that (i) The public Health Engineering Department, Govt. of West Bengal has installed one STP of 6.7 MLD capacity at Digha. The average generation of sewage in Digha Coastal area is 2 MLD. The sewage generated is fully treated through the STP. Consent has been granted for the said STP, (ii) Effluent discharged from hotels units in Digha are treated through the STP, (iii) Only one ground water monitoring station has been recently sanctioned by CPCB under NWMP, as ground water quality monitoring in West Bengal is dine in April and October, every year, first such monitoring will be done in Apr, 2020.

4. Water Quality of seawater (marine/ seawater/ creek/ coastal) carried out during 2018-2019

Central Pollution Control Board (CPCB) under National Water Quality Monitoring Programme (NWMP) monitors the water quality of seawater (marine/ seawater/ creek/ coastal) at 63 locations in 5 States including creeks as on 31.01.2020. Indian coastline touches 13 States/ UTs (namely Gujarat, Maharashtra, Goa, Karnataka, Kerala, Tamil Nadu, Andhra Pradesh, Odisha & West Bengal States and Daman & Diu & Puducherry Union Territory). However, under NWMP coastal water quality monitoring is carried out on monthly basis in 5 States only (as in December 2019). Maximum number of monitoring locations are in Maharashtra (34) followed by Andhra Pradesh (11), Goa (11), Odisha (4) and Gujarat (3).

State-wise compiled analysis results of coastal water for the years 2018-2019 are annexed **(Annexure-XII to Annexure-XIII)** based on the limited data available with CPCB. Based on the assessment of water quality data for the years 2018 and 2019 monitored in A.P., Goa, Gujarat, Maharashtra & Odisha and comparison with SW – II Criteria (Bathing, Contact Water Sports and Commercial Fishing) notified under The Environment (Protection) Rules, 1986.

Table 2 and Table 3 gives summary status of compliance to SW-II criteria (for Bathing, Contact Water Sports and Commercial Fishing) during the years 2018 and 2019

Table -2: Summary-status of compliance for criteria parameters of SW – II (Bathing, Contact Water Sports and Commercial Fishing) notified under E (P) Rules, 1986 for the year 2018

S No.	State	No. of Locations Monitored under NWMP	No. of Monitored Locations not complying to the marine primary water quality criteria parameters notified under E (P) Rules, 1986					Compliance Status w.r.t the marine primary water quality criteria parameters
			pH	BOD	DO	FC	Turbidity	
1.	Goa	11	-	7	-	11	7	All the locations not complying
2.	Gujarat	03	1	3	2	3	2	All the locations not complying
3.	Maharashtra	34	3	33	30	30	-	One location viz Karambavane creek at Chiplun, Village- Karambavane, District- Ratnagiriis is complying for all the parameters
4.	Odisha	04	-	1	1	4	1	All the locations not complying
	Total	**52**	**4**	**44**	**33**	**48**	**10**	

Table -3: Summary-status of compliance for criteria parameters of SW – II (Bathing, Contact Water Sports and Commercial Fishing) notified under E (P) Rules, 1986 for the year 2019

S No.	State	No. of Locations Monitored under NWMP	No. of Monitored Locations not complying to the marine primary water quality criteria parameters notified under E (P) Rules, 1986					Compliance Status w.r.t the marine primary water quality criteria parameters
			pH	BOD	DO	FC	Turbidity	
	Andhra Pradesh	11	01	07	04	-	-	Sea Water Bay Bengal, Uppada Beach Road, Kakinada; Sea Water, Bay of Bengal, Kothapatnam Beach and Sea Water, Bay Of Bengal, Manginapudi Beach, Machilipatnam are complying with the criteria parameters
	Goa	11	05	03	-	11	04	All the locations not complying
	Gujarat	03	-	02	02	01	02	All the locations not complying
	Maharashtra	34	06	34	30	25	06	All the locations not complying
	Odisha	04	-	01	-	03	02	Paradeep location is complying
	Total	**63**	**12**	**47**	**36**	**40**	**14**	

5. Views of CPCB on control of marine pollution

Based on the information received from the 13 States/UTs, following observations are made: -

- The coastal areas of different States/UTs except Andaman & Nicobar and Odisha are categorized into different zones such as SW-I, SW-II, SW-III, SW-IV and SW-V.

- Total of 121 numbers of major cities/towns present in the Coastal States/ UTs except Lakshadweep. There are 214 major drains present in the coastal States/UTs except Lakshadweep which outfall into creeks/estuaries/ sea water. Most of the generated sewage both treated or untreated sewage and industrial effluents are disposed of through 171 major drain outfalls in the coastal areas.

- As per the received information, total sewage generation in the coastal areas (13 States/UTs) is about 6065 MLD from 121 major towns or cities. There are 298 STPs (total Installed Capacity of about 5304 MLD) at present in operation in the coastal areas, among them 203 STPs have obtained Consent under the Water (Prevention and Control of Pollution) Act, 1974, while 95 STPs have not obtained Consent. Actual sewage treatment in 203 STPs is about 40999 MLD, leaving a gap of 685.37 MLD in sewage treatment plants installed capacity. Only 100 out of 298 STPs located in coastal areas are complying with the discharge norms. At present, 60 STPs presently under construction in 08 States and 2 UTs to meet the gap in generated sewage treatment in coastal areas of the States/UTs. *Most of the States/UTs are involved in discharge of both treated and untreated sewage leading to marine water pollution and thereby making marine water unfit for bathing and other designated best uses.*

- As regards industrial effluent management, 48188 industries (in 10 coastal States/UTs) are present generating total industrial effluent at about 5279 MLD. Only 5891 out of 48188 industries are having captive ETPs, out of which 5550 captive ETPs are operated by the industries are complying with effluent discharge norms. There are 21 CETPs (having total installed capacity of 210.62 MLD) at present and 7127 industries are having membership of 21 CETPs. Details of remaining 35170 industries are not provided by the respective SPCBs/PCCs. Total quantity of treated industrial effluent discharged in coastal areas is about 5133 MLD. 717 industries have installed OCEMS, while 45 industries yet to install OCEMS. *As the treated industrial effluent is also discharged into the marine waters through river system, there is a possibility of accumulation of heavy metals in fish tissues and may likely affect human health through food chain system. All the concerned States/UTs have to take action against the industries which are in*

operation without captive effluent treatment plant facilities. This matter is also being taken separately with the respective coastal SPCBs/PCCs by CPCB.

- Hazardous waste generation in the coastal States/UTs is about 20633 MTA. At present, Hazardous Waste Treatment Storage and Disposal Facilities in the States/UTs viz., A.P (1 Integrated TSDF), Gujarat (4 Integrated TSDFs with both common incinerator and common SLF, 2 TSDFs only with common Incinerators and 3 TSDFs only with common secured landfills (SLFs)), Karnataka (6 TSDFs only with common Incinerators and 2 TSDFs with common SLFs), Kerala (1 TSDF with common SLF), Maharashtra (3 Integrated TSDFs with both common incinerator and common SLF and 1 TSDF only with common SLF), Odisha (1 TSDF only with common SLF), Tamil Nadu (1 Integrated TSDF with both common incinerator and common SLF and 1 TSDF only with common SLF) and West Bengal (1 Integrated TSDF with both common incinerator and common SLF) and Daman, Diu, Dadra and Nagar Haveli (1 Integrated TSDF with both common incinerator and common SLF)

- Bio medical waste generation in the coastal areas of the States/UTs is about 16105 TPA. Daman & Diu UT, Goa State, and Lakshadweep UT are not having Common Bio-medical waste Treatment Facilities, However, generated bio-medical waste is disposed of in deep burial after chemical disinfection. In Daman & Diu, all the generated biomedical waste disposed through M/s Enclear Biomedical Waste Pvt. LTD., Surat. The biomedical waste generated in Goa is partly disposed in the incinerator facility of Goa Medical College and by individual HCFs by encapsulation/deep burial after autoclaving and disinfection as applicable.

  Municipal Solid Waste, Plastic waste, E-Waste as well as C & D waste generated in the coastal States /UTs is about 13,59,155 MTA, 2,60,812 MTA, 195840 MTA and 14,93,690 MTA, respectively. *There are no adequate facilities for treatment and disposal of these wastes in most of the coastal States/UTs.*

- *Presently, marine or sea water quality is monitored by CPCB in association with the States/UTs only at 63 locations in 5 States including creeks (as on 31.01.2020). Most of the States/UTs are not having adequate infrastructure for sampling of sea water specially 5 KM from shore.* CPCB/SPCBs/PCCs are not having adequate infrastructure for sea water monitoring and coastal water quality data available with CPCB is limited.

  National Centre for Coastal Research (NCCR), Chennai under Ministry of Earth Sciences is having adequate infrastructure for sampling of sea water including deep sea waters and also working on indices for sea waters in association with Ministry of Jal Shakti and Ministry of Statistics and Programme Implementation,

Government of India. NCCR, Chennai has expertise and adequate infrastructure, may be assigned the task of classification of coastal areas in Priority-I to V considering the toxic nature of the effluent being discharged into the sea waters by the States/UTs.

Also, Clause 4 of the CRZ Notification, 1991, under the sub heading "Procedure for monitoring and enforcement", stated: "The Ministry of Environment & Forests and the Government of State or Union Territory and such other authorities at the State or Union Territory levels, as maybe designated for this purpose, shall be responsible for monitoring and enforcement of the provisions of this notification within their respective Jurisdictions.". National and State Coastal Zone Management Authority shall have the power to take measures for protection and improving the quality of the coastal environment and preventing, abating and controlling environment pollution in coastal areas.

Further, The National Centre for Sustainable Coastal Management (NCSCM), under Ministry of Environment, Forest and Climate Change (MoEF&CC), Government of India is set up for better protection, conservation, rehabilitation, management and policy design for the coast. It would promote integrated and sustainable management of coastal and marine areas in India and advise the Union and States/Union Territory Government and other associated stakeholders on policy and scientific matters relating to Integrated Coastal Zone Management (ICZM).

Considering coastal length of country about 7,516.6 km and the present scenario with regard to the coastal or marine pollution and with a view to have an implementable approach for Integrated Coastal Management plans in the country, expert organization such as NCSCM under MoEF& CC, Central and State *Coastal Zone Management Authorities* may be assigned the task of integrated coastal management including preservation and maintenance of sea water quality designed in each coastal Zone.

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Annexure-I

(Hon'ble NGT Order dated 03.12.2019 passed in OA No. 829 of 2019 in the matter of Lt. Col. Sravadaman Singh Oberoi Vs Union of India & Ors)

ANNEXURE-I

Court No. 1

BEFORE THE NATIONAL GREEN TRIBUNAL
PRINCIPAL BENCH, NEW DELHI

Report dated 18.11.2019
In
Original Application No. 829/2019

Lt. Col. Sarvadaman Singh Oberoi — Applicant(s)

Versus

Union of India & Ors. — Respondent(s)

Date of hearing: 29.11.2019
Date of uploading of order: 03.12.2019

CORAM: **HON'BLE MR. JUSTICE ADARSH KUMAR GOEL, CHAIRPERSON**
HON'BLE MR. JUSTICE S.P WANGDI, JUDICIAL MEMBER
HON'BLE MR. JUSTICE K. RAMAKRISHNAN, JUDICIAL MEMBER
HON'BLE DR. NAGIN NANDA, EXPERT MEMBER
HON'BLE MR. SAIBAL DASGUPTA, EXPERT MEMBER

ORDER

1. This application seeks direction to formulate an action plan to restore sea water quality along the Indian Coastal areas. Reliance has been placed on report of CPCB "Classification of Indian Coasts and Conflicts" (1982-86) referring to marine pollution by sewage and other discharge in violation of environment laws.

2. According to the Applicant, certain coastal areas are critically polluted on account of dumping of sewerage and waste. Over 80% of marine pollution is from land based sources- industrial, agricultural and urban. Municipal sewage is the main source of pollution. Aquaculture Authority, Government of India has issued guidelines that Aquafarms having area of five hectares and above should have Effluent Treatment System (ETS). Discharge of untreated sewage and

effluents in sea is continuing in large scale. Pollution of marine coastline is on gradual increase in the same way as 351 polluted river stretches in the country. Directions of this Tribunal dated 08.04.2019 in O.A. No.673/2018 dealing with 351 polluted river stretches should be extended to the polluted coastal stretches, doing so can result in reclaiming of substantial water. National Coastal Zone Management Authority (MCZMA) has been constituted on 09.10.2017 but the problem of marine pollution remains untackled which calls for intervention by this Tribunal.

3. Vide order dated 17.09.2019, this Tribunal, observed:

> *"Individual issues of scientific handling of solid waste and other waste as well as sewage are already subject matter of proceedings before this Tribunal in several matters.[1] The Tribunal has directed that no untreated sewage/industrial effluent be discharged into any water bodies (which includes coastal waters). Any violation is to result in compensation starting from 01.04.2020.[2] The Tribunal is also considering the issue of remedying 351 identified polluted river stretches[3]. The directions issued therein includes steps for controlling industrial and municipal sewage which may result in marine pollution. The subject of preventing untreated sewage and industrial effluents being discharged in the sea can also be gone into the said case. The CPCB has issued directions dated 15.12.2016, under Section 18(1)(b) of the Water (Prevention and Control of Pollution) Act, 1974 on the subject, to all the State PCB/PCCs to ensure that no sewage or industrial pollution is discharged in coastal waters. CPCB may file latest status report on the subject in O.A No.673/2018. The District Magistrates may also cover the subject of coastal and marine pollution in the District Environment Plans to be prepared with reference to order of this Tribunal dated 15.07.20194 and furnish reports to the Chief Secretary concerned. The Chief Secretaries of the concerned States/UTs may also include the subject in their monitoring and in the reports furnished to this Tribunal in O.A No. 606/2018."*

4. Accordingly, the CPCB has filed a consolidated report dated 18.11.2019. On the subject of marine pollution, it is stated that the

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[1] Compliance of Municipal Solid Waste Rules, 2016, O.A. No. 606/2018, Paryavaran Suraksha Samiti & Anr. v. UOI, O.A. No. 593/2017.
[2] Paryavaran Suraksha Samiti & Anr. v. UOI, O.A. No. 593/2017, at para 21(iii)
[3] Original Application No. 673/2018

order of this Tribunal has been communicated to the Chief Secretaries of all States/UTs for compliance and all States/UTs have been asked to submit action taken reports with reference to directions of CPCB dated 15.12.2016 under Section 18(1)(b) of the Water (Prevention and Control of Pollution) Act, 1974. Only response received is from State of Goa and Daman, Diu and Dadar Nagar Haveli (DD and DNH) Pollution Control Committees (PCCs). Letter dated 22.10.2019 from the State of Goa is merely a copy of letter addressed to different departments but does not indicate the compliance status. Report from the Daman and Diu, gives status of sewage disposal showing that sewage generation capacity at Daman is 7.5 MLD and treatment capacity is 4.2 MLD. At Diu, sewage generation capacity is 3.5 MLD and there is no treatment capacity but 7 MLD capacity is proposed.

5. Before we issue further directions, we may note the relevant data in this regard based on study reports in public domain. India has a coastline of about 7,555 km, of which about 5,400 km belong to peninsular India and the remaining to the Andaman, Nicobar and Lakshadweep Island. With less than 0.25% of the world coastline, India houses 63 million people, approximately 11% of global population living in low lying coastal areas. The coast also includes 77 cities, including some of the largest and most dense urban agglomerations – Mumbai, Kolkata, Chennai, Kochi and Visakhapatnam. India's coastal zone is endowed with a wide range of mangroves, coral reefs, sea grasses, salt marshes, sand dunes, estuaries, lagoons, and unique marine and terrestrial wildlife. The abundant coastal and offshore marine ecosystems include 6,740 km of mangrove belts, including part of the Sundarban (West Bengal) and

the Bhitarkanika (Orissa), which are among the largest mangroves in the world.[4] Andaman and Nicobar Islands have world famous and unique coral bio-diversity which is getting increasingly threatened due to tourism more than the carrying capacity.

6. Further, there are reports that indiscriminate releases of untreated or partially treated wastes without considering the assimilative capacity of the waste receiving water body have resulted in pockets of polluted environs with depleted coastal resources, public health risks and loss of biodiversity. Coastal and marine water pollution has increased throughout the world, mainly due to direct discharges from rivers, increased surface run-off and drainage from expanding port areas, oil spills and other contaminants from shipping, and domestic and industrial effluents. Persistent Organic Pollutants (POPs) are semivolatile organic compounds of special concern because of their toxicity, persistence, long-range transport and bioaccumulation potential. They are present in the marine environment, notably in coastal areas affected by municipal sewage, agricultural and aquaculture effluents, industry and shipping traffic. Rapid urban-industrialization, maritime transport, marine fishing, tourism, coastal and sea bed mining, offshore oil and natural gas production and aquaculture cause severe environmental degradation. A significant ecological change is pronounced in this coastal region due to contamination of inorganic and organic pollutants originated from huge discharge of domestic and industrial effluents carried by the rivers, disposal of contaminated mud from harbor dredging, intense shipping activities, agricultural runoffs, oil spills, deforestation, ill-planned river basin developments as well as atmospheric depositions.

[4]https://www.researchgate.net/publication/236852954_Persistent_Organic_Pollutant_Residues_in_the_Sediments_and_Biota_in_Coastal_Environment_of_India

Tamil Nadu contributed 41% of total cases of cholera in India in 2002. It is interesting to note that around 77% of total cases of cholera occurred in the coastal states on India (Gujarat, Maharashtra, Karnataka, Kerala, Tamil Nadu, Andhra Pradesh, West Bengal).

7. The matter of degradation of environment in coastal areas has been dealt with by the Hon'ble Supreme Court inter-alia in ***Indian Council for Environment-Legal Action Vs Union of India (UOI) and Ors. (1996) 5 SCC 281.*** While considering the issue, it was observed:

> *"5. With a view to protect the ecological balance in the coastal areas, the then Prime Minister is stated to have written a letter in November, 1981 to the Chief Ministers of coastal States in which she stated as under:*
>
> ***The degradation and misutilization of beaches in the coastal States is worrying as the beaches have aesthetic and environmental value as well as other values. They have to be kept clear of all activities at least upto 500 metres from the water at the maximum high tide.*** *If the area is vulnerable to erosion, suitable trees and plants have to be planted on the beaches without marring their beauty.* ***Beaches must be kept free from all kinds of artificial development. Pollution from industrial and town wastes must also be avoided totally."***

7.1 Reference was to environmental guidelines for beaches as follows:

> *"The traditional use of sea water as a dump site from our land-derived wastes have increased the pollution loads of sea and reduced its development potentials including the economic support it provides to people living nearby.* ***Degradation and misutilization of beaches are affecting the aesthetic and environmental loss.*** *These could be avoided through prudent coastal development and management based on assessment of ecological values and potential damages from coastal developments."*

7.2 The Hon'ble Supreme Court referred to the status of compliance of Environmental Management Plans in coastal areas and found large scale non –compliance. It was observed:

"26.....Violation of anti-pollution laws not only adversely affects the existing quality of life but the non enforcement of the legal provisions often results in ecological imbalance and degradation of environment, the adverse affect of which will have to be borne by the future generations."

7.3 Accordingly, it was suggested that "the Central Government should consider setting up under Section 3 of the Act. State Coastal Management Authorities in each State or zone and also a National Coastal Management Authority."

8. It is necessary to ensure that coastal water at beach remains fit for bathing and survival of aquatic life, fishing and contact sports in accordance with Sea Water Criteria in terms of directions of CPCB dated 15.12.2016 under Section 18(1)(b) of the Water (Prevention and Control of Pollution) Act, 1974.

9. The report of CPCB is incomplete about the status of compliance with regard to norms of pollution laws in all the coastal areas in the country, particularly with regard to discharge of untreated and industrial and municipal effluents and solid waste. Accordingly, we direct CPCB to submit a comprehensive status report which regard to coastal pollution by way of classification of coastal areas in priority-I to V as has been done for 351 polluted stretches within three months positively.

10. As already directed in *Paryavaran Suraksha Samiti (supra)*, in pursuance of order of Hon'ble Supreme Court dated 22.02.2017 in *Paryavaran Suraksha Samiti Vs. Union of India*[5], the local bodies and States are liable to pay compensation for discharge of any untreated sewage into the water bodies after 01.04.2020.[6] We may also note

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[5](2017) 5 SCC 326

[6] Vide order dated 28.08.2019 in O.A. No. 593/2017, Paryavaran Suraksha Samiti &Anr. v. UOI, ¶21(iii).

that local bodies have been held to be liable to be prosecuted for violation of provisions of the Water Act by a recent judgment of the Hon'ble Supreme Court dated 26.11.2019 in Criminal Appeal No. 1734 of 2019 in Karnataka State Pollution Control Board Vs B. Heera Naik.

11. Accordingly, we direct that all the State PCBs/PCCs of coastal States/ UTs may give the relevant information to CPCB within one month from today failing which defaulting Status/UTs will be liable to pay Rs. 10 lakhs per month till compliance.

A copy of this order be sent to all the Chief Secretaries, State PCBs/PCCs of all coastal States: Kerala, Tamil Nadu, Andhra Pradesh, Karnataka, Goa, Maharashtra, West Bengal, Odisha, Lakshadweep, Daman & Diu, Gujarat, Dadra and Nagar Haveli, Andaman and Nicobar, Puducherry and CPCB by email.

List for further consideration on 22nd of April, 2020.

Adarsh Kumar Goel, CP

S.P Wangdi, JM

K. Ramakrishnan, JM

Dr. Nagin Nanda, EM

Saibal Dasgupta, EM

December 03, 2019
Report dated 18.11.2019 filed
In Original Application No. 829/2019
DV

Annexure II

(A copy of the CPCB letter dated 13.12.2019 & the format circulated to the States/UTs)

ANNEXURE-II

Hon'ble NGT MATTEI
IMPORTAN
13.12.201

F.No. A-14011/1/2019-WQM-I 9857-9869

To

Member Secretary

(SPCBs/PCCs) (Andhra Pradesh, Daman, Diu Dadra & Nagar Haveli, Gujarat, Goa, Karnataka Kerala, Lakshadweep, Odisha, Puducherry, Tamil Nadu, Andaman & Nicobar, West Bengal Maharashtra)

Sub: Hon'ble NGT (PB) New Delhi order dated 03.12.2019 in O.A. No. 829/2019 in the matter of Lt. Col Sarvadaman Singh Oberoi Vs Union of India & Ors.

Sir,

This has reference to Hon'ble NGT order dated 03.12.19 passed in O.A. No. 829 of 2019 on the captioned subject. Vide aforesaid order Hon'ble NGT referred at Para 11, which is reproduced as below: -

"We direct that all the State PCBs/PCCs of coastal States/ UTs may give the relevant information to CPCB within one month from today failing which defaulting States/ UTs will be liable to pay Rs. 10 lakhs per month till compliance."

Further, it is to inform that in view of non-receipt of relevant information from States/UTs on the captioned subject, (copy of CPCB directions dated 15.12.2016 is enclosed as **Annexure I**) CPCB could file only the incomplete report about the status of compliance with regard to norms of pollution laws in all the coastal areas in the country, particularly with regard to discharge of untreated and industrial and municipal effluents and solid waste.

In view of above, it is requested to arrange to submit the relevant information in the given format (enclosed as **Annexure-II**) within 15 days for ensuring compliance of Hon'ble NGT (PB) order dated 03.12.2019 passed in O.A. No. 829/2019 to enable to take further action by CPCB in the matter.

Yours faithfully,

(A.Sudhakar)
Divisional Head, WQM-I

o/c

Encl: As above

Copy to:

1. PS to Chief Secretary (As per list enclosed) :For information and for ensuring compliance to Hon'ble NGT order dated 03.12.2019 passed in O.A. No. 829/2019

2. PS to MS : For information of 'MS', please

3. DH (Law), CPCB : For information , please

केन्द्रीय प्रदूषण नियंत्रण बोर्ड
13/12/19

(A. Sudhakar)

o/c

Central Pollution Control Board

(Ministry of Environment, Forest and Climate Change)

WQM-I Division, Parivesh Bhawan, East Arjun Nagar,

Delhi-110032

FORMAT FOR SUBMISSION OF INFORMATION ON "MUNICIPAL SEWAGE, INDUSTRIAL EFFLUENT AND WASTE MANAGEMENT SCENARIO IN COASTAL AREAS" IN COMPLIANCE TO HON'BLE NGT ORDER DATED 03.12.2019 PASSED IN O.A. NO. 829/2019

Sl No.	Contents		
1.	**Basic Information**		
	Name of the SPCB/PCC	:	
	Name of the Contact Person/Nodal Officer and Designation	:	
	Telephone Number (Office)	:	
	Mobile Number	:	
	E-mail Id	:	
2.	**Categorization of Coastal Areas in the State/UT (Please indicate location –wise relevant category indicated below)**		

Coastal area location					
SW-I (Salt Pans, Shell Fishing, Mariculture and Ecologically Sensitive Zone)					
SW-II (Bathing, Contact Water Sports and Commercial Fishing)					
SW-III (Industrial cooling, Recreation (non-contact) and Aesthetics)					
SW-IV (Harbour)					
SW-V (Navigation and Controlled Waste Disposal)					

3.	**Major Cities/Towns located in Coastal Areas in the State/UT**		
(i)	Major Cities/Towns in Coastal Areas	:	
(ii)	Major Drains outfall into Creeks/ Estuaries/ Sea Water and their total numbers	:	
4.	**Status of Sewage Generation, its Treatment and Disposal in Coastal Areas**		
(i)	Total Sewage Generation in Coastal Areas in the State/UT (in MLD)	:	
(ii)	Total No. of STPs in Coastal Areas	:	
(a)	Total No. of STPs obtained Consent under Water Act, 1974	:	
(b)	Total No. of STPs not Obtained Consent under Water Act, 1974	:	
(iii)	Total Installed Capacity of STPs (in MLD)	:	
(iv)	Actual total sewage treated in STPs at present (in MLD)	:	
(v)	Gap in Sewage Treatment in coastal areas (in MLD)	:	
(vi)	No. of STPs presently under construction to meet the gap in Sewage treatment in Coastal areas in the State/UT	:	
(vii)	Compliance Status of STPs	:	Total no. of STPs:....
(a)	No of STPs in Coastal areas complying to discharge norms	:	
(viii)	Quantity of untreated sewage discharged into Coastal water (in MLD)	:	
(ix)	Quantity of treated Sewage discharged in to Coastal water (in MLD)	:	
5.	**Status of Industries in Coastal Areas**		
(i)	Total No. of industries located in Coastal areas	:	
(ii)	Category wise No. of Industries	:	
(a)	Total No. of 17 Category Highly Polluting Industries	:	
(b)	Total No. of Grossly Polluting Industries	:	

(c)	Other Water Polluting Industries, if any	:	
6.	**Status on Industrial Effluent Generation and CETPs in Coastal Areas**		
(i)	Total Industrial Effluent generated by Industries (in MLD)	:	
(ii)	Total No. of industries having Captive ETPs	:	
(iii)	Total No. of Captive ETPs operating by Industries Complying with discharge norms	:	
(iv)	Total treated effluent discharged in Coastal areas (in MLD)	:	
(v)	No. of CETPs located in the Coastal Areas	:	
(a)	Location-wise CETPs with Installed Capacity (in MLD)	:	
(b)	No of industries having membership of CETPs	:	
(vi)	Gap in Industrial Effluent Treatment in coastal areas (in MLD)	:	
(vii)	Total untreated industrial effluent discharged in Coastal Water (in MLD)	:	
(viii)	Status on Installation of OCEMS by the industries	:	
(a)	No. of Industries installed OCEMS	:	
(b)	No. of Industries yet to install OCEMS	:	

7. Waste Management Scenario in Coastal Areas

Sl. No.	Type of waste	Quantity of Waste Generation (MTA)	No. of Treatment and disposal Facilities Existing and Capacity	Gap in Treatment and Disposal of Waste	Total waste disposed into Coastal water (MTA)
(i)	Hazardous Waste				
(ii)	Bio-Medical Waste				
(iii)	Municipal Solid Waste				
(iv)	Plastic Waste				
(v)	E-Waste				
(vi)	C & D waste				

8.	**Status of Critically Polluted Areas in Coastal areas**		
(i)	Name of Critically Polluted areas located in coastal areas	:	
(ii)	CEPI Scores (Area Wise)	:	
(iii)	Major Industrial Sectors	:	
9.	**Coastal Water Quality of Coastal Waters (Latest data from Jan, 2019 to till date) & Summary**		
(i)	No. of Water Quality Monitoring Stations	:	
(a)	CPCB	:	
(b)	SPCB	:	
(ii)	Water Quality Status (with respect to BOD)	:	(Pl. attach Water Quality data of Coastal Areas from Jan 2018 to October 2019)
10.	**Standards stipulated for STPs/CETPs**	:	Yes/No (Please attach details on stipulated standards for STPs and CETPs)
11.	**Action Taken Report on CPCB directions dated 15.12.2016**	:	Pl. attach ATR as Annexure

Annexure-III

General Information about Coastal Areas in the States/UTs

Sl No.	Name of the State/UT	Date of issuing of CPCB letter	Response of States/UTs		Categories of Coastal Areas in the States/UTs	No of Major Towns/Cities in the Coastal States/UTs	Total No of Major Drain Outfalls into Creeks/Estuaries Sea Water
			Letter dated communicated by the SPCBs/PCCs	Date of receipt of Information by CPCB			
1.	Andaman & Nicobar	13.12.2019	3/1/2020	3/1/2020	-	03	71
2.	Andhra Pradesh		9/1/2020	15/1/2020	SW-I, SW-II, SW-III, SW-IV	06	30
3.	Daman and Diu		7/1/2020	13/1/2020	SW-II	02	03
4.	Goa		18/2/2020	18/2/2020	SW-II	03	-
5.	Gujarat		18/2/2020 and 24/02/.2020	18/2/2020 and 02/03/2020	SW-I, SW-II, SW-III, SW-IV, SW-V	30	32
6.	Karnataka		31/12/2019 and 13/01/2020	03/1/2020 and 21/01/2020	SW-I, SW-II, SW-III, SW-IV, SW-V	01	04
7.	Kerala		21/12/2019, 8/1/2020 and 02/03/2020	21/12/2019 13/1/2020 and 02/03/2020	SW-I, SW-II, SW-IV, SW-V	25	43
8.	Lakshadweep		3/1/2020	27/1/2020	SW-II	Nil	Nil
9.	Maharashtra		16/12/2019 and 6/1/2020	20/12/2019 and 6/1/2020	SW-I, SW-II, SW-III, SW-IV, SW-V	21	06
10.	Odisha		14/1/2020	14 and 21/1/2020	-	04	02
11.	Puducherry		31/12/2019	02/01/2020	SW-II, SW-IV	04 Districts	14
12.	Tamil Nadu		31/12/2019	31/12/2019	SW-I, SWII, SW-III, SW-IV, SW-V	21	08
13.	West Bengal		04/02/2020	10/02/2020	Not Available	01	01
					Total	**121**	**214**

Annexure-IV

State-wise Status of Sewage Management Scenario in Coastal Areas

Sl No.	Name of the State/UT	No. of Major Cities/ Towns in Coastal Areas	Total Sewage Generation in Coastal States/ UTs (in MLD)	Total No. of STPs in Coastal Areas	Total Installed Capacity of STPs (in MLD)	Gap in Installed Sewage Treatment Capacity in Coastal areas (in MLD)	Actual Sewage Treated in STPs at present (% Capacity Utilization) (in MLD)	Consent Status of STPs		No of STPs in Coastal Areas Complying to Discharge Norms	No. of STPs presently under construction in Coastal areas in the States/UTs
								Total No. of STPs obtained Consent from SPCB/PCC	Total No. of STPs not obtained Consent from SPCB/PCC		
1.	Andaman & Nicobar	03	14.175	86	1.7	12.475	1.7 (100 %)	22	64	22	03
2.	Andhra Pradesh	06	310.50	16	165.50	145	100 (60.42 %)	Nil	16	Nil	02
3.	Daman and Diu	02	11	1	4.21	6.79	1.5(35.63 %)	Nil	01	01	02
4.	Goa	03	388	3	20	368	20 (100 %)	Nil	03	01	02
5.	Gujarat	30	338.62	6	195.6	143.02	111.3 (56.9 %)	04	02	06	11
6.	Karnataka	01	95	7	103.25	-8.25	44.5 (43.1 %)	07	-	07	02
7.	Kerala	25	81.91	113	7.088	Nil	6.4133 (90.5 %)	111	02	-	02 (13 MLD)
8.	Lakshadweep	Nil	7	1	0.008	6.992	0.008 (100 %)	01	Not Available	01	Nil
9.	Maharashtra	21	4133.99	42	3946.54	187.45	3197.2 (81.01%)	42	Nil	42	31 (3197.2)
10.	Odisha	04	26.5	4	24	2.5	24 (100 %)	Nil	04	04	01 (2.5 MLD)
11.	Puducherry	04 Districts	58	3	68.5	-10.5	40 (58.4 % %)	03	-	03	-
12.	Tamil Nadu	21	597.77	15	761.18	-163.41	550.25 (76.29 %)	12	03	12	04
13.	West Bengal	01	02	01	6.7	-4.7	02 (29.85 %)	01	Not Available	01	Nil
	Total	**121**	**6064.47**	**298**	**5304.28**	**685.37**	**4098.87**	**203**	**95**	**100**	**60**

Annexure-V

State-wise Status on Industrial Effluent Management in Coastal Areas

Sl No.	Name of the State/UT	Total No. of Industries in Coastal areas	Total Industrial Effluent Generation (in MLD)	Total No. of Industries having Captive ETPs	Total No. of Captive ETPs operating by Industries Complying with discharge norms	Total Treated Industrial Effluent Discharged in Coastal areas (in MLD)	Status of CETPs located in the Coastal Areas			Status on Installation of OCEMS by industries	
							No. CETPs	Total treatment capacity of CETPs (MLD)	No of industries having membership of CETPs	No. of Industries (HPI) Installed OCEMS	No. of Industries yet to Install OCEMS
1.	Andaman & Nicobar	491	NA	17	5 (153 KLD treated)	Nil	Nil	Nil	Nil	Nil	Nil
2.	Andhra Pradesh	1054	2773.57	176	171	2756.22	3	25.07	164	130	1
3.	Daman and Diu	3547	1.315	97	97	Nil	Nil	NA	NA	03	Nil
4.	Goa	NP	-	209	207	3.470	Nil	Nil	Nil	10	1
5.	Gujarat	858	1999.9	427	423	1886.47	2	17.5	249	47	25
6.	Karnataka	21	209	18	14	209	2	4.1	18	5	Nil
7.	Kerala	495	22.8135	302	302	6.602	Nil	Nil	Nil	8	15
8.	Lakshadweep	Nil	Nil	Nil	NA	Nil	Nil	Nil	Nil	Nil	Nil
9.	Maharashtra	41455	233.4	4138	3852	233.4	13	163.55	6523	450	NA
10.	Odisha	16	16.68	10	10	16.48	Nil	NA	NA	6	Nil
11.	Puducherry	5	0.012	4	4	0.012	Nil	Nil	Nil	5	Nil
12.	Tamil Nadu	246	21.849	493	465	21.779	1	0.4	173	53	3
13.	West Bengal	Nil	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Total	**48188**	**5278.54**	**5891**	**5550**	**5133.43**	**21**	**210.62**	**7127**	**717**	**45**

Annexure-VI

State-wise Status on Waste Management Scenario in Coastal Areas

Sl. No.	Name of the State/UT	Type of waste	Quantity of Waste Generation (MTA)	No. of Treatment and Disposal Facilities and Capacity	Gap in Treatment and Disposal of Waste (MTA)	Total waste disposed into Coastal water (MTA)
1.	Andaman & Nicobar	**Hazardous Waste**	0.16 KL	Nil	Nil	Nil
		Biomedical Waste	43.514	06-incinetors (01 (100 Kg/hr) and 05 (50 Kg/hr), 07 shredders and 06 autoclaves	Nil	Nil
		Municipal Solid Waste	43,800	5-Compost Yards, 2- Dry Waste Resource Centers for Segregation and transportation to mainland for mixing	Nil	Nil
		Plastic Waste	1999	2- Dry Waste Resource Centers for segregation and transportation to mainland for mixing		
		Electronic Waste	0.5	Nil. PBMC has authorized an agency for collection and transportation of e-waste to mainland for recycling		
		C& D waste	1	C&D waste are collected on call basis through designated PBMC call center and stored in the custody of concerned engineering site office. Thereafter, used for filling of potholes also utilized for filling and maintenance work.		
2.	Andhra Pradesh	**Hazardous Waste**	309560.8752	2 Nos. (950000+95000 MT)	-	-
		Biomedical Waste	1432.718	9 CBWTFs	-	-
		Municipal Solid Waste	566780	-	-	-
		Plastic Waste	21553.75	-	-	-
		Electronic Waste	0.075	-	-	-
		C& D waste	40432	-	-	-
3.	Daman and Diu	**Hazardous Waste**	997.56	01 No. Landfill (Cap.2 Lakh MTA), Incinerator (Cap.12 MT/day)	Nil	Nil
		Biomedical Waste	90	Nil, All the generated bio-medical waste disposal through M/s Enclear Biomedical Waste Pvt. Ltd., Surat	Nil	Nil
		Municipal Solid Waste	39600	Composting Plant (Cap. 100 MT/Day). Recyclable waste disposed through authorized recyclers. In Diu, waste being sent for co-processing at Narmada Cement, Jafrabad Work, Gujarat	Nil	Nil
		Plastic Waste	1947.7	Generated plastic waste disposed through registered recyclers	Nil	Nil
		Electronic Waste	4.2	(i) E-process House, Vapi, (ii) Eco Green Recycling, Valsad, Gujarat	Nil	Nil
		C& D waste	83	Landfilling and Recycled for manufacturing of Ready-mix for Concrete-Paving.	Nil	Nil
4.	Goa	**Hazardous Waste**	28483.72	NIL. However, in the process of setting up for common TSDF		

Sl. No.	Name of the State/UT	Type of waste	Quantity of Waste Generation (MTA)	No. of Treatment and Disposal Facilities and Capacity	Gap in Treatment and Disposal of Waste (MTA)	Total waste disposed into Coastal water (MTA)
				a) Secured Landfill - 25,000 MTA, b) Incinerator 1.5 Tons/hr.		
		Biomedical Waste	670.54	Partly disposed in the incinerator facility of Goa Medical college and remaining is disposed by individual HCFs by encapsulated pit/deep burial pit after autoclaving and disinfection as applicable	Nil	Nil
		Municipal Solid Waste	235.35	Treated at Saligao Plant 150- TPD which is catering to 25 coastal panchayats from North Goa, CCP, Mapusa. Other panchayats / Municipalities have their own facilities of composting in home composting to single dwelling units.		
		Plastic Waste	4498 Tons/Year	The total plastic waste collected is send to cement bailing for co-incineration to Karnataka		
		Electronic Waste	60 MT/year	E-waste is collected and transported to other states for recycling		
		C& D waste	Nil	-	-	-
5.	Gujarat	**Hazardous Waste**	310598.735	1 TSDF-6,36,000 MT (Bharuch); 1TSDF-120000 MT (Alang, Bhavnagar). Disposed to common TSDF site and sell to registered recycler (Jamnagar). 114 Navsari	0	0
		Biomedical Waste	339	Sent to CBWTF located at Ankleshwar (Bharuch) 1 (Jamnagar), 1(Navsari), 1 (Porbandar)	0	0
		Municipal Solid Waste	193535.75	1-25000 cubic metre/month (Jamnagar), 1 (Navsari)	50076.15	0
		Plastic Waste	16346.385	2 (Jamnagar), 1 (Navsari)	3754.385	0
		Electronic Waste	0	0	0	0
		C& D waste	9072.95	1 (Navsari)	4474.45	
6.	Karnataka	**Hazardous Waste**	31594.37	No treatment facility in this zonal jurisdiction. Hazardous waste generated in this zone is sent to TSDF for landfilling, various incinerators, Co-processors & Recyclers across the state for treatment & disposal	Nil	Nil
		Biomedical Waste	1135.55	3 Nos. of CBMWTF (Incinerators) (250 and 120 Kg/hr + 200 Kg/hr + 50 Kg/hr)	-	Nil
		Municipal Solid Waste	153,069	7 Nos. landfill sites	Mangalore-131 TPD; Udupi- 2 ULB (1 is under establishment+1 is under litigation)	-
		Plastic Waste	8193.75	4 Nos. (Two industries each in Udupi & Mangalore jurisdiction engaged in plastic waste recycling)	-	Nil
		Electronic Waste	4673.19	-	-	Nil
		C& D waste	6363	No treatment facility adopted	-	Nil

Sl. No.	Name of the State/UT	Type of waste	Quantity of Waste Generation (MTA)	No. of Treatment and Disposal Facilities and Capacity	Gap in Treatment and Disposal of Waste (MTA)	Total waste disposed into Coastal water (MTA)
7.	Kerala	**Hazardous Waste**	5713.708 MTA	1 TSDF- 10 Lakh Tons Capacity	Nil	Nil
		Biomedical Waste	28.501TPA	1 CBWTF- Capacity:37.5 TPD	Nil	Nil
		Municipal Solid Waste	25029.14 TPA	1 MSW Plant at Brahmapuram (300 TPD) and 1 MSW Plant at Kozhikkode (100 TPD)	Action is required on certain % of MSW which will be taken as per SWM Rules, 2016	
		Plastic Waste	Not provided	Information not provided		
		Electronic Waste				
		C& D waste	No reasonable quantity generated			
8.	Lakshadweep	**Hazardous Waste**	Nil (only the used oil in other waste 48 MT)	Nil . There is no treatment facility in Lakshadweep and proposed to transport the same to the one of the authorized recyclers in Mangalore.	Nil	Nil
		Biomedical Waste	123 Kg	Needle Destroyer-10, Autoclave-3 and Incinerator-2	Nil	Nil
		Municipal Solid Waste	1200	Coconut leaf Shredder 50kg/hr -1 Bio Composter machine 250 Kg/hr- 1 Bio gas plants 36. The Non-biodegradable wastes are collecting, segregating and transporting to recyclers at mainland. The biodegradable waste are disposing through composting and biogas plants	-	Nil
		Plastic Waste	153	Incinerator -1 Plastic shredder 50 Kg/hr- 1. The installation of treatment facilities in the remaining islands are under progress	-	Nil
		Electronic Waste	Inventory is under progress	There is no treatment facility in Lakshadweep Proposed to transport the same to the one of the authorized recyclers in Mangalore.	-	Nil
		C& D waste	50	All the C&D wastes are re using for filling foundation of the new constructions	NA	Nil
9.	Maharashtra	**Hazardous Waste**	669966.23	2 TDSFs at Raigad and Navi Mumbai. 2 SLFs (1,20,000 MT/Yr+21,600 MT/Yr), Incineration – 1.5 MT /hr x 2		
		Biomedical Waste	9930	8 CTF, Incinerator-10019 MTA, Autoclave-25112 MTA	0	0
		Municipal Solid Waste	4655943.65	(50 Facility) 2376588 MTA	2279355.65 MTA	0

Sl. No.	Name of the State/UT	Type of waste	Quantity of Waste Generation (MTA)	No. of Treatment and Disposal Facilities and Capacity	Gap in Treatment and Disposal of Waste (MTA)	Total waste disposed into Coastal water (MTA)
		Plastic Waste	110778.82	(71 Recyclers) 109074 MTA	92432.35 MTA	0
		Electronic Waste	197491.03	36, Capacity – 41450 MTA	191023.6 MTA	0
		C& D waste	1376582.86 MT	01, Capacity 300 MTD	1350338.285 MTA	0
10.	Odisha	**Hazardous Waste**	668798 TPA	1 No. (75000TPA)	9397 TPA	Nil
		Biomedical Waste	197.5	82 health care facilities are having captive treatment facility	-	Nil
		Municipal Solid Waste	4686	4104	582	Nil
		Plastic Waste	35.56			
		Electronic Waste	15.18	15.18	Nil	Nil
		C& D waste	44668	-	-	Ni;
11.	**Puducherry**	**Hazardous Waste**	38045	Sent to neighboring States	38%	Nil
		Biomedical Waste	1576.8	1 No. and 10 TPD	-	Nil
		Municipal Solid Waste	218635	3 Nos. and 324 TPD	Proposed to change to new one	Nil
		Plastic Waste	8433	Nil	G.O. on ban on ban on plastic from 2.8.19	Nil
		Electronic Waste	62.5	Sent to neighbor States	Nil	Nil
		C& D waste	16169	-	-	-
12.	Tamil Nadu	**Hazardous Waste**	48.063	0	0	0
		Biomedical Waste	656.364	0	0	0
		Municipal Solid Waste	1806.117	30	0	0
		Plastic Waste	160.779	2	0	0
		Electronic Waste	0.242	0	1	0
		C& D waste	268.539	1	1	0
13.	West Bengal	**Hazardous Waste**	Nil	Not Available	Not Available	Not Available
		Biomedical Waste	4.75	Collected & treated through Common Bio-medical Waste management Facility at Haldia	Nil	Nil
		Municipal Solid Waste	Not Available	Not Available	Not Available	Not Available
		Plastic Waste	Use of plastic carry bags is completelt banned in Digha coastal areas			

Sl. No.	Name of the State/UT	Type of waste	Quantity of Waste Generation (MTA)	No. of Treatment and Disposal Facilities and Capacity	Gap in Treatment and Disposal of Waste (MTA)	Total waste disposed into Coastal water (MTA)
		Electronic Waste	Not Available	Not Available	Not Available	Not Available
		C& D waste	Not Available	Not Available	Not Available	Not Available

Annexure– VII

Action taken report on CPCB directions dt 15.12.16.

CANDHRA PRADESH)

The CPCB issued directions to prevent deterioration of Coastal waters for compliance. The Action taken report is submitted as below:

S. No	Directions	Compliance Status / Action taken
1	*State Pollution Control Board shall ensure that local/urban bodies setup sewage treatment plants (STPs) of adequate capacities including provisions for sewage system to cover the entire local/urban areas and accordingly grant consent. The treated effluent shall comply with the standard.*	
	Srikakulam District, Andhra Pradesh: There are 6 ULBs viz., i) Srikakulam Municipal Corporation, ii) Amdalavalasa Municipality, iii) Itchapuram Municipality, iv). Palasa – Kasibugga Municipality, v) Rajam Nagarapancyat, & vi) Palakonda Nagarapancyat. The estimated sewage generation from 6 ULBs is 16.5 MLD. No ULB in the district is having STP to treat the sewage generated. Srikakulam Municipal Corporation is constructing one 10 MLD STP to treat total sewage generated. **Vizianagaram District, Andhra Pradesh:** There are 4 ULBs and one Nagar Pachayat viz., i) Vizianagaram Municipal Corporation, ii) Paravathipuram municipality, iii) Bobbili municipality, iv) Saluru municipality and v) Nellimarla Nagar panchayat. The estimated sewage generation from above ULBs is 31.61 M LD. No municipality in Vizianagaram district has established sewage treatment plant except Vizianagaram Municipal Corporation. The existing STP of 5.0 MLD in Vizianagaram Municipal Corporation is not in working condition. New STP of 5.0 MLD capacity is under construction adjacent to the old STP, under AMRUT scheme. As of now the untreated sewage discharged into water bodies. **Visakhapatnam District, Andhra Pradesh:** There are 3 ULBs viz., i) Greater Visakhapatnam Municipal Corporation (GVMC), ii) Yelamanchilli Municipality & iii) Narsipatnam Municipality. The estimated sewage generation from 3 ULBs is 214 M LD. In GVMC there are 11mini STPs and 5 major STPs in GVMC are existing to treat the sewage generated. GVMC is required to install additional STPs to treat total sewage generated. No STPs are existing in Yelamanchilli Municipality & Narsipatnam Municipality, therefore the untreated sewage discharged into water bodies. **East Godavari District, Andhra Pradesh:** There is one Municipal Corporation and one Municipality are exiting in the coastal area. The total sewage generation of Kakinada Municipal Corporation and Pithapuram Municipality is 60 MLD (55 + 5). They are not having STPs for treatment of sewage. The untreated sewage discharged into coastal water.	

West Godavari District, Andhra Pradesh:

There are one Municipal Corporation and 8 Municipalities viz., i) Eluru Municipal Corporation (EMC), ii) Tadepalligudem Municipality iii) Tanuku Municipality, iv) Nidadavole Municipality, v) Bhimavaram Municipality, vi) Palacole Municipality, vii) Narsapur Municipality, viii) Jangareddygudem Municipality ix) Kovvur Municipality. The estimated sewage generation from 9 ULBs is 80 M LD. Eluru Municipal Corporation, Bhimavaram & Tadepalligudem are constructing STPs of each 5 MLD capacity. Remaining Municipalities has not furnished any proposals. However, at present the entire sewage generation is being discharged into Fresh Water Canals and Drains (Water Bodies).

Krishna District, Andhra Pradesh:

There is one Municipality i.e., Machilipatnam Municipality is existing in Coastal area the sewage generation from the Machilipatnam municipality is 11 MLD. At present this municipality is not having STP for treatment of sewage. The untreated sewage discharged into Sivaganga Drain which is ultimately joining in to the coastal water. The Govt. has sanctioned STP of capacity 5 MLD (30% complete and remaining works are expected to be completed by dt.25-05-2025). The APPCB will ensure that Municipal Corporation, Machailipatnam will complete construction of STP to treat the sewage generated before discharging.

Guntur District, Andhra Pradesh:

The Bay of Bengal (sea coast) is the Eastern Boundary of the Guntur District. The length of the coastline is about 43 kms spread in 4 Mandals in Guntur District namely Nizampatnam, Repalle, Bapatla and Karlapalem. A irrigation drain locally called Nallamada drain carrying waste water generated from various activities such as agriculture run-off, aquaculture activities and domestic sewage from upstream villages/ towns joining into Sea after passing through the Bapatla Municipality. The actual load of pollutants into the drain varies from season to season. Urban local bodies in the Guntur District was informed many times for construction of sewage treatment plants for treatment of sewage generated at the Municipalities prior to discharge.

Prakasam District, Andhra Pradesh:

There is one Municipality i.e., Chirala is exiting in coastal area. The sewage generation from the municipality is 6 MLD. The municipality is not having STP for treatment of sewage. Therefore, the untreated sewage discharged into coastal water. The Govt. has sanctioned STP of capacity 0.5 MLD for the ULB which is not adequate for treatment of total sewage generated from the municipality. The construction of STP is not yet started. APPCB periodically issuing notices to the municipality to set up Sewage Treatment Plants (STP) of adequate capacity including provision for sewerage system to cover the entire local urban areas and the treated effluent to comply with the Standards in order to prevent deterioration of surface, sub-surface and coastal waters.

Nellore District, Andhra Pradesh:

There is one Municipal Corporation and 6 Municipalities are existing and estimated sewage generation from ULBs i.e., Nellore Municipal Corporation -

	77.87 MLD; Kavali Municipality-17.19 MLD; Gudur Municipality-8.23 MLD; Atmakur Municipality-3.56 MLD; Venkatagiri Municipality-5.9 MLD; Naidupet Municipality-4.97 MLD; Sullurpet Municipality - 8.66 MLD. The Nellore Municipal Corporation has constructed and is operating 1 No. of STP of 5 MLD capacity and the treated water discharging into the land belongs to the Municipal corporation & part of the treated water discharging into Penna river and 4 Nos. of STPs of 99 MLD capacity are under construction phase. One STP of 15 MLD capacity is under construction phase at Kavali Municipality. The Govt has sanctioned 1.5 MLD capacity of STPs to the Atmakur; Naidupet, Venkatagiri and Gudur Municipalities. 3 Nos. of STPs of 8 MLD sanctioned to Sullurupet Municipality, which are yet to be constructed therefore the untreated sewage discharged into water bodies and open lands. APPCB periodically issuing notices to the urban/local bodies to set up Sewage Treatment Plants (STPs) of adequate capacity including provision for sewerage system to cover the entire local urban areas and the treated effluent to comply with the Standards in order to prevent deterioration of surface, sub surface and coastal waters. *APPCB periodically issuing notices to the urban/local bodies to set up Sewage Treatment Plants (STPs) of adequate capacity including provision for sewerage system to cover the entire localjurban areas and the treated effluent to comply with the Standards in order to prevent deterioration of surface, sub-surface and coastal waters.*
2.	*SPCB/PCC shall also make mandatory for industrial and commercial units to discharge their effluent within prescribed limits to coastal waters. SPCB/PCC shall provide inventory of all commercial/ industrial activities along with their quantify effluent discharged to coastal waters including their compliance status.*
	Srikakulam District, Andhra Pradesh: The Nagavali, Vamsadhara, Suvarnamukhi, Vegavathi, Mahendratanaya, Gomukhi, Champavathi, Bahuda and Kumbikota Gedda are the important rivers of the District. M/s. Vamsadhara Paper Mills existing near to the Vamsadhara River. However, consent of the board is given to use treated effluent shall be recycled to the maximum extent possible in to the process and balance shall be utilized for irrigation/plantation within the premises. 3 Industries are permitted/consented by APPCB for discharging their treated effluents into Sea. The industries have obtained Environment & Coastal Regulation Zone (CRZ) Clearance from MOEF&CC, New Delhi for laying of pipe lines and discharging the treated wastewater through pipelines into Sea. As per the recommendations of National Institute of Oceanography (NIO) for discharge of treated effluents, the industries laid marine pipe lines with requisite length and depth of the pipe line in to coastal waters. The AP. Pollution Control Board also issuing Consent for Establishment (CFE) & Consent for Operation (CFO) to the industries. Bulk Drug Industries; 1) M/s. Andhra Organics Limited, IDA Pydibheemavaram (V), Ranasthalam (M), Srikakulam District. 2) M/s. Aurobindo Pharma Limited, Pydibheemavaram (V), Ranasthalam (M), Srikakulam District. 3) M/s. Lantech Pharmaceuticals Ltd, Chittivalasa (V), Pydibheemavaram, Ranasthalam(M),

Srikakulam District.

Vizianagaram District, Andhra Pradesh:
There are 6 rivers flowing through Vizianaga ra m District namely River Nagavali, Suvarnamukhi, Vegava thi, River Champavathi, River Gosthani and Kandivalasa. M/s. Vijaya nagar Bio-Tech Limited, Kothakopperla (V), Pusapatirega (M), Vizianagaram District is at a distance of 650 mts to Champavathi river.

In Vizianagaram District, 3 industries are permitted / consented by APPCB for discharging their treated effluents into Sea. The industries have obtained Environment & Coastal Regulation Zone (CRZ) Clearance from MOEF&CC, New Delhi for laying of pipe lines and discharging the treated wastewater through pipelines into Sea. As per the recommendations of National Institute of Oceanography (NIO) for discharge of treated effluents, the industries laid marine pipe lines with requisite length and depth of the pipe line in to coastal waters. The AP. Pollution Control Board also issuing Consent for Establishment (CFE) & Consent for Operation (CFO) to the industries.

There are 2 Nos. of Bulk Drug & 1No. starch unit in Vizianagaram District which are permitted by A P Pollution Control Board for marine discharge of treated effluents.

1) M/s. Mylan Laboratories Limited, G. Chodavaram (V), Pusapa tirega (M) Vizianagara m District
2) M/s. SMS Pharmaceuticals Limited, Kandivalasa (V), Pusapatirega (M), Vizianagaram District.
3) M/s. Vijayanagar Bio-Tech Limited, Kotha kopperla (V), Pusapatirega (M), Vizia nagaram District

M/s.Vijayanagar Bio-Tech Limited obtained disposal method of treated effluent for onland irrigation and into marine disposal during monsoon season. But the industry has not utilized the marine outfall in the past six years. Subsequently the industry obtained CFO amendment for disposal of treated effluent to marine disposal throughout the year. At present the Treated waste water is being utilized for onland irrigation.

Visakhapatnam District, Andhra Pradesh:
There are two rivers flowing through Visakhapatnam District namely Gostani and Sarada rivers. M/s. Chodavaram Co-Operative sugars, M/s. The Anakapalli sugars and M/s. Tern Distilleries existing near to the Sarada river. However, consent of the board is given to use treated effluents for on land irrigation within the premises for these 3 industries. M/s. The Anakapalli sugars and M/s. Tern Distilleries are not operating at present. M/s. Chodavaram Co-Operative sugars is a seasonal industry and directions dated 08.06.2018 were issued not to discharge wastewater directly or indirectly into the sarada river.

In Visakhapatnam District, 12 industries are permitted / consented by APPCB for discharging their treated effluents into Sea. The industries have obtained Environment & Coastal Regulation Zone (CRZ) Clearance from MOEF&CC, New Delhi for laying of pipe lines and discharging the treated wastewater through

pipelines into Sea. As per the recommendations of National Institute of Oceanography (N IO) for discharge of treated effluents, the industries laid marine pipe lines with requisite length and depth of the pipeline in to coastal waters. The AP. Pollution Control Board also issuing Consent for Establishment (CFE) & Consent for Operation (CFO) to the industries.

There are about 2 Nos. of CETPs & 3 Nos. of Bulk Drug Industries in Visakhapatnam District which are permitted by A P Pollution Control Board for marine discharge of treated effluents. Effective monitoring is being carried out for all 5 marine discharge units which are discharging treated effluents into sea, duly meeting the norms of the Board for marine discharge.

CETPs
1) M/s RAM KY Pharma City (India) Private Limited, Parwada, Visakhapatnam
2) M/s Brandix India Apparel City Pvt. Ltd, APSEZ, Atchuthapuram (M), Visakhapatnam.

Bulk Drug Industries
1) M/s Hetero Drugs Limited & Hetero Laboratories Limited, Neelakonda Narsapuram (V), Nakkapallae (M), Visakhapatnam District
2) M/s Deccan Fine Chemicals (India) Private Ltd, Kesavaram (V), Vankatanagaram (P), Payakaraopeta (M), Visakhapatnam District
3) M/s Divis Laboratories Limited, Chippada (V), Bheemunipatnam (M), Visakhapatnam

The following 7 industries are using sea water for cooling purpose and discharging cooling tower blow downs / process treated effluents into Sea after meeting the discharge standards
1) M/s. Hinduja National Power Corporation Ltd.,
2) M/s. Simhadri Thermal Power Plant (NTPC)
3) M/s. Rashtriya Ispat Nigam Ltd., (Visakhapatnam Steel Plant)
4) M/s. Andhra Petro Chemicals Ltd.,
5) M/s. Coromandel International Ltd.,
6) M/s. Hindustan Petroleum Corporation Ltd., (Visakh Refinery)
7) M/s. Rain CII (Vizag) Ltd.,

East Godavari District, Andhra Pradesh:
There are about 23 No. of industries and 60 Nos of prawn seed hatcheries are existing in the coastal area.

Out of 23 industries, there are 3 Nos of 17 Category industries (1.M/s. Nagarjuna Fertilizers and Chemicals Ltd., Nagarjuna Road, Kakinada; 2. M/s. Coromandel International Limited, Vakalapudi (V), Beach Road, Kakinada Rural; 3. M/s. Parry Sugars India Private Limited, Vakalapudi Village, Kakinada Rural;

12 Nos of Red Category industries (1. M/s. Kaleesuwari Refinery and Industry Private Limited located at Phase-III, Industrial Park, Vakalapudi, Kakinada; 2. M/s. Universal Bio Fuels Pvt., Ltd., Plot No. 36, Industrial Park, Vakalapudi (V),

	Kakinada Rural; 3. M/s. Ruchi Soya Industries Limited,New Port Area, Beach Road, Kakinada; 4. M/s. Oil and Natural Gas Corporation Limited, KG Basin Project of Odalarevu Onshore Terminal at Odalarevu Facility, Allavaram Mandal ; 5. M/s. Oil & Natural Gas Corporation Ltd., (Formerly Gujarat State Petroleum Corporation Limited), Mallavaram – V, Tallarevu – M; 6. M/s.Vedanta Limited (Cairn Oil & Gas) S.Yanam Village, Uppalaguptam Mandal ; 7. M/s. Reliance Industries Limited, (Onshore Facility & Booster Gas Compressor Station) Gadimoga Village, Tallarevu Mandal; 8. M/s. Gemini Edibles & Fats India Private Limited (Unit-I), Suryaraopeta Village, Kakinada; 9. M/s.Gemini Edibles & Fats India Private Limited (Unit-II), Plot Nos.29, 30, 32, APIIC, Industrial Area, Vakalapudi, Industrial Estate, Kakinada Rural; 10. M/s. Lohiya Edible Oil Ltd., Plot No.25, Industrial Park, Vakalapudi (V), Kakinada Rural; 11. M/s. Spectrum Power Generation Limited, Beach Road, Near Uppada, Kakinada, East Godavari District; 12. M/s. Kakinada Sea Ports Ltd, Beach Road, Kakinada, East Godavari District). 8 Nos of Orange Category industries (1. M/s. Adani Wilmar Limited, ADB Road, Thammavaram – V, Kakinada; 2. M/s. Adani Wilmar Limited (Unit – II), Tammavaram (V), Suryaraopeta GP, Kakinada, East Godavari District; 3. M/s.Agarwal Industries Pvt., Ltd., Industrial Estate, Vakalapudi (V), Kakinada (R); 4. M/s. Bhagawati Fats & Edible Oils Pvt., Ltd., Vakalapudi(V), Kakinada Rural; 5. M/s. Santhoshimathaa Edible Oils Refinery Private Limited, R.Sy.No.245 Part, Industrial Park, Plot No.39B, APIIC – IALA Vakalapudi (V), Kakinada Rural; 6. M/s.Devi Fisheries Limited, Kakinada SEZ, Plot No.D4, Ponnada Village, U.Kothapalli Mandal; 7. M/s.Nekkanti Mega Food Park Private Limited, Ponnada Villages, U.Kothapalli Mandal; 8.M/s.Coastal Aqua Pvt Limited, Mulapeta, U.Kothapalli Mandal East Godavari District) are operating with individual ETPs. The remaining 60 Nos of prawn seed hatcheries are operating with individual ETS (Effluent Treatment System) at coastal area and permitted to discharge their treated wastewater into sea. Further, the industries 1. M/s.Vedanta Limited (Cairn Oil & Gas) S.Yanam Village, Uppalaguptam Mandal; 2. M/s. Reliance Industries Limited, (Onshore Facility & Booster Gas Compressor Station) Gadimoga Village, Tallarevu Mandal; 3. M/s. Oil & Natural Gas Corporation Ltd., (Formerly Gujarat State Petroleum Corporation Limited), Mallavaram – V, Tallarevu – M are only permitted to discharge their treated effluents into sea. **West Godavari District, Andhra Pradesh:** There are No CETPs are existing in West Godavari at present. However, APPCB advised the state government (APIIC) to construct a CETP for treatment of industrial effluents near Bhimavaram with marine outfall to clean-up Yenamadurru drain, for which Special Purpose Vehicle has to be formed. **Krishna District, Andhra Pradesh:** In Krishna district there are no industries operating / existing in coastal area and discharging waste water into sea. **Guntur District, Andhra Pradesh:**

About 12 No. of prawn hatcheries are in operation at Guntur District and all these hatcheries are existing near sea shore to meet the saline water requirement for prawn seed hatching process and discharging waste water after disinfection. The APPCB has not consented any industry / projects in Guntur District to discharge either treated or untreated waste water into sea.

Prakasam District, Andhra Pradesh:

There are about 58 no. of industries existing in coastal area. Out of 58 industries, there are 3 Prawn processing units, one Tobacco processing unit, one Seed processing unit, one Refined oil unit existing in the coastal area of Prakasam District. The above 6 units are operating with individual ETPs. The remaining 52 units are small scale dyeing units operating at Chirala & surroundings since several years. Out of 52 industries 6 units are having individual ETP and 5 dyeing industries are sending their effluent to the M/s. Balaji Dying works for treatment and disposal.

The remaining 41 units are not having treatment facility and are discharging untreated effluents into water bodies. The Board is periodically reviewing these industries & issuing directions/stop production orders/closure orders to the dyeing units. The action taken by the Board is as below:

1. No of industries issued with Directions – 7.
2. No of industries issued with Stop Production order – 28.
3. No of industries issued with Closure order – 8.

An association was formed by dyeing units located at Chirala & surrounding area in the name of M/s. Sri Venkateswara Yarn & Cotton Dyers Association, and for the purpose of establishment of Common Effluent Treatment Plant (CETP) of capacity 2.5 MLD for treatment and disposal of 1.5 MLD effluent generated from all dyeing units operating at Chirala area, Prakasam District. The Association obtained Terms of Reference (TOR) from SEIAA, AP on 14.05.2018 for the proposal for establishment of CETP.

SPSR Nellore District, Andhra Pradesh:

The Board Permitted 5 Nos. of thermal power plants to discharge their cooling water into sea/ creek. i.e., 1. Mis.Sri Damadaram Sanjeevaiah Thermal Power Station of M/s. Andhra Pradesh Power Development Co. Ltd., Nelatur & Pynampuram Villages, Muthukur Mandal, SPSR Nellore District; 2. M/s. Sembcorp Energy India Limited (Project-1) (formerly Mis.Thermal Power Tech Corporation India Ltd, Painapuram (V), Muthukur(M), SPSR Nellore District; 3. M/s. Sembcorp Energy India Limited (Project -2) (formerly M/s. NCC Power Projects Limited & M/s. Nelcast Energy Corporation Limited), Near Painampuram, Varakavipudi and Sivarampuram Villages, Muthukur (M), SPSR Nellore District; 4. M/s. Simhapuri Energy Pvt Ltd., Tamminapatnam and Mommidi Villages, Chillakur (M1), SPSR Nellore district; 5. M/s. Meenakshi Energy Ltd., Tamminapatnam and Mommidi Villages, Chillakur (M1), SPSR Nellore District.

Out of the above 5 Nos. of thermal power plants, two thermal power plants viz., M/s. Meenakshi Energy India Limited & M/s. Simhapuri Energy India Limited

	which are permitted to discharge their cooling water are not in operation since Twenty months.
	With regard to industrial effluents, the APPCB is not permitting any industry to discharge their treated effluents into rivers/drains. *These industries which are permitted with marine outfall system, have installed online continuous effluent monitoring system to verify the status of the treated effluent being discharged into sea which is connected to the CPCB/APPCB web site. The treated effluents are stored in guard ponds. The guard ponds outlet pumping is under lock & key facility. The treated effluents in the guard ponds are analyzed by APPCB officials for its compliance with Board norms and after ensuring that the treated effluents are complying with the marine discharge standards prescribed by the Board, the discharge into the sea is carried out in the presence of PCB Officials only.*

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GUJARAT ATR ON CPCB DIRECTIONS

ANNEXURE-VIII

Annexure – 11 (A) – Junagadh

Action Taken Report:

- In Junagadh region there are thirteen local bodies out of which two local bodies are having sewage discharge in sea namely 1. Veraval – Patan Joint Nagar Seva Sadan, Dist. Gir Somnath and 2. Mangrol Nagar Seva Sadan, Dist. Junagadh.
- Above mentioned local bodies has yet not started STP installation work and both local bodies has not applied for consent.
- Board has already issued directions on dated 28.03.2017 and Notice of directions on dated 13.01.2015 & 14.06.2017 to Veraval – Patan Joint Nagar Seva Sadan. Board has issued directions to Mangrol Nagar Seva Sadan on dated 28.03.2017.

Annexure – 11 (B) – Anand

Action Taken Report:

Board has issued,

1. Legal notice Water Act-1974 on dtd.06/07/2019 for not provide STP & generated domestic sewage discharged without any treatment directly into sea, and to obtain consents from Board.
2. Legal notice under Water Act-1974 on dtd.25/09/2019 for not provide STP & generated domestic sewage discharged without any treatment directly into sea, to obtain consents from Board.
3. Notice of Direction has been issued under Water Act-1974 dtd.06/01/2020 as per referring NGT judgment in the matter of O.A.No.593 and O.A.No.829 and CPCB letter dtd.01/10/2019.

Annexure – 11 (C) – Jamnagar

Action Taken Report - RO, GPCB, Jamnagar

Sr. No.	Action Points	Action Plan	Action Taken by Industries/Local body
1	GPCB shall ensure that local/urban bodies set up Sewage Treatment Plants (STPs) of adequate capacity including provision for sewage system to cover the entire local/urban area and accordingly grant consent. The treated effluent shall comply with the standard.	All local bodies located near coastal area shall provide STP and discharge treated effluent in to sea i.e. Jamnagar Municipal Corporation, Okha Nagarpalika, Salaya Nagarpalika, Sikka Nagarpalika, Dwarka Nagarpalika.	Jamnagar Municipal Corporation has provided 70 MLD STP. The treated waste water discharged into river Rangmati which is ultimately met Sea (Gulf of kutchh). Dwarka Nagarpalika has provided STP of capacity 7.4 MLD and the treated waste water is discharged to Govt. waste land near STP. The remaining Nagarpalikas are under planning to install STP.
2	SPCB/PCC shall also make mandatory for industrial and commercial units to discharge their effluent within prescribed limits to coastal waters. SPCB/PCC shall provide inventory of all commercial/ industrial activities along with their quantify effluent discharged to coastal waters including their compliance status	To ensure following industries shall be provided Treatment facility and discharge treated waste water into the Sea. 1. Reliance Industries Ltd. (DTA), At-Motikhavdi, Dist- Jamnagar. 2. Reliance Industries Ltd. (SEZ), At-Motikhavdi, Dist- Jamnagar. 3. Nayara Energy Ltd., At -Vadinar, Dist- Devbhumi Dwarka 4. Tata Chemicals Ltd., At- Mithapur, Dist- Devbhumi Dwarka 5. G.S.E.C.Ltd. Thermal Power Station, Sikka, Dist- Jamnagar 6. RSPL Ltd., At- Kuranga, Dist- Devbhumi Dwarka	1. Reliance Industries Ltd. (DTA) has provided ETP and treated waste water @ 1,20,000 m3/day discharged into the Sea (Gulf of Kutchh) through diffuser system at a point suggested by NIO and approved by the Board. 2. Reliance Industries Ltd. (SEZ) has provided ETP and treated waste water @ 1,50,000 m3/day discharged into the Sea (Gulf of Kutchh) through diffuser system at a point suggested by NIO and approved by the Board. 3. Nayara Energy Ltd. has provided ETP and treated waste water @ 79,200 m3/day discharged into the Sea (Gulf of Kutchh) through diffuser system at a point suggested by NIO and approved by the Board. 4. Tata Chemicals Ltd. Mithapur has provided settling ponds and treated

			waste water @ 2,40,000 m3/day discharged into the Sea (Gulf of Kutchh). 5. G.S.E.C.Ltd. Thermal Power Station discharge treated cooling tower blow down water @ 93,400 m3/day into the Sea (Gulf of Kutchh). 6. RSPL Ltd. discharge treated waste water @ 3,81,575 m3/day into the Arabian Sea through diffuser system at a point suggested by NIO and approved by the Board.
3	SPCB/PCC shall provide the water quality monitoring data of coastal waters carried out either by SPCB/PCC or any other organization/laboratory.	RO, GPCB, Jamnagar has carried out water quality monitoring of coastal waters at following point : 1. Down Stream of Tata chemical Limited, near Vill: Arambhada Dist- Devbhumi Dwarka 2. Near Essar Jetty Dist- Devbhumi Dwarka 3. Near Reliance Jetty Dist- Jamnagar 4. Near plot No. 4, Sachana ship breaking yard Dist- Jamnagar 5. Near Narara Island, Dist- Jamnagar 6. Near light house, Rozy port Dist- Jamnagar	Water quality monitoring data of coastal water as per Annexure -1 (Excel File)

Annexure – 11 (D) – Sarigam

Regarding Hon. NGT order dated 15/07/2019 in the matter of O.A. 710/2017, Valsad district has been formed District Environment committee in coordination with District Magistrate & collector of Valsad. In this committee, Indian coast guard has to be included as member so marine pollution can be covered in District Environment Plan. Therefore letter regarding same also forwarded to District Magistrate, Collector & chairman of Committee.

Action Taken Report of Umbergaon Taluka

Marine Pollution:-

There are two major source of marine pollution within Umbergaon Taluka which are Sewage of Umbergaon Town & Sarigam Industrial estate. Sarigam industrial Estate has Common effluent treatment plant (CETP) for treatment of generated industrial wastewater from member units. Treated waste water is being discharged into Arabian Sea at Tadgam village coast. CETP is complying with discharged standards laid by CPCB.

Common Effluent Treatment Plant Details:-

Sr. No.	Management's Name and Location	No's of Members	Type of Industries	Capacity in MLD	Status
1	Sarigam Clean Initiative (GIDC-CETP)(12.5mld) - Sarigam	134	Sarigam region industries like Textile Processing, Chemicals, Fabric Weaving, Yarn Manufacturing, Plastics' Moldings, Engg. Fabrication, Foundries and Pharmaceuticals formulation, strip/coil, copper tube/pipe, pesticide.	12.5 MLD	CCA Vide No. AWH-103773 Validity-03/07/2024

a. Details of sewage disposal from city/town into sea/creek/estuary

Presently Umbergaon Town does not have any sewage treatment facility. They are discharging untreated sewage into Arabian Sea through creek. Recently on dated 21/11/2019 regional office carried visit of Nagarpalika regarding compliance verification of Hon. NGT order and instructed to provide details of proposed STP & action taken report.

Sr. No.	City/Town	Sewage Generation (MLD)	Treatment Capacity (MLD)	Remark
1.	Umbergaon Nagarpalika	3 MLD	STP is under planning stage by Gujarat Urban Development Company Ltd.	Disposed off into Arabian Sea through Natural drain.

Annexure - II(E) - Navsari

ATR -NGT Order

(a) In connection to the National Green Tribunal (NGT) order dated: 710/2017 ; In this regards District Environmental Planning Committee for Navsari District for planning, implementation and reviewed of the District Environment Plan covering following aspects : **The District Plan will cover following issues:**

1. Solid waste Management
2. Bio-Medical Waste Management
3. Plastic Waste Management
4. Construction and Demolition waste (C & D)
5. 102 Non-attainment cities
6. Polluted River Stretches
7. Polluted Industrial Clusters
8. Noise Pollution
9. Utilization of treated sewage
10. Sand Mining
11. Conservation of Water Bodies

& First meeting is already conducted dtd. 19-10-2019 ; MoM of the same attached herewith for ready reference . " ANNEXTURE-A"

With **reference to Hon'ble NGT Order dated 17-09-2019 and HO letter dtd. 24-10-2019**

- In this regard earnestly requested letter address with personally discussed with District Magistrate to allot suitable date & time to convey the second meeting of District Environmental planning committee at Navsari District vide dtd. 27-11-2019 . A coy is attached here with ready reference " ANNEXTURE -B"

In connection to the Hon'ble National Green Tribunal (NGT) order O.A no. 829/2019 dated: 17-09-2019; regarding Tribunal has directed that no untreated sewage/industrial effluent be discharged into any water bodies (which includes coastal waters). In this regards ; as far as Navsari region is concern , there is no any direct untreated or treated sewage / industrial effluent discharged into coastal water even though in Navsari region there is not a single discharged or out let permitted for industrial effluent except Aqua culture industries.

However untreated sewage waste water from Navsari -Vijalpore , Gandevi & Bilimora leading to river Purna & Ambika respectively & ultimately reaches to costal area & It is also noted that in Navsari region there is no any river fall under PRS priority criteria .

GPCB Navsari Regional Office has already intimated as well as reviewed during monthly basis conducted meeting under the chairmanship of District collector MSW & SIT meeting organized at collectrate Navsari regarding progress of Nagarpalikas : Bilimora, Gandevi , Navsari & vejalpore

regarding submission of Time Bound Program along with Bar chart of proposed Sewage Treatment plant
....

Present status details of Sewage disposal from City/Town in to Sea/Creek/estuary

Name of Regional Office: GPCB, NAVSARI

Sr.No.	City /Town	Sewage Generation (MLD)	Treatment Capacity (MLD)	Remark	Mode of disposal of sewage proposed
1	Navsari Nagarpalika	59.63	59.630 (Common STP Proposed)	Under Proposal	River Purna
2	Vijalpore Nagarpalika, Navsari			Under Proposal	River Purna
3	Gandevi Nagarpalika, Navsari	2.8	2.8	Under Proposal	River Ambika
4	Bilimora Nagarpalika, Navsari	4.19	4.19	Under Proposal	River Ambika

GPCB Regional Office is regularly carried out water quality monitoring on monthly basis at location
1. RIVER PURNA AT STATE HIGH WAY, VIRAVAL,NAVSARI
2. RIVER AMBICA AT AMALSAD-BILIMORA BRIDGE, AMALSAD
3. RIVER KAVERI AT VAGHRECH- Bilimora –Valsad road

ANNEXURE - A

Minutes Of Meeting Of "District Environmental Planning Committee", Navsari District To Monitor The Overall Compliance of Hon. NGT Order Dated 15/07/2019 In Matter of O. A. 710/2017. Meeting Held On 19/10/2019 At 13:00 Hrs At Sabha Khand of Collector Office-Navsari.

District Environment Planning Committee constituted to monitor the overall compliance of Honourable NGT order dated 15/07/2019 in matter of O.A. 710/2017, for the District of Navsari, The meeting was conveyed on 19/10/2019 at 13:00 hrs at Sabha Khand of Collector Office-Navsari, as soon as District Level Sanklan Samiti Meeting is over. All the District Level responsible officers including designated members present.

The Meeting was chaired by the District Magistrate & District Collector/ Chairman of the committee.

The Member Secretary of the Committee & Regional Officer, Gujarat Pollution Control Board welcomed and briefed about the Honorable NGT order O.A. 710/2017 to cover following issues...

1. Bio-Medical waste (Management & Handling) Rules-2016
2. Solid Waste Management-2016
3. Plastic Waste Management-2016
4. Construction and Demolition Waste (C & D)
5. 102 Non – attainment cities
6. Polluted River Stretches
7. Polluted Industrial Clusters
8. Noise Pollution
9. Utilization of Treated Sewage
10. Sand Mining
11. Conservation of Water Bodies.

And its amendments time to time notified by the Ministry of Environment, Forest & Climate Change, Government of India, under the provisions of the Environment (Protection) Act, 1986 for above said Rules & Regulations. In order to comply the legal requirements and to monitor overall compliance and as per recommendations of Honorable NGT order.

The Regional office, GPCB, Navsari had made a detailed presentation on above said various Rules and its implementation. He also further explained the responsibilities of the each and Concern authority/departments.

The Chairman of the District Level Committee suggested to explore the possibility for effective implementation of water harvesting system at least by various Government Offices

ANNEXURE - "B"

GPCB /NAV-T- 105 /Navsari / 1309 / 2019

27 NOV 2019

To;P
The Collector
Collector Office,
Near Kaliyawadi , Navsari.

Sub: District Environmental Planning Committee : regarding
Ref: (1) Hon'ble NGT Order dtd. 15-07-2019 in the matter of O. A .710/2017
(2) Hon'ble NGT order dtd. 17-09-2019 of O.A. 829/2019
(3) GPCB/CCA-VSD-GEN-13/2019/525463 dtd. 24-10-2019

Respected Madam,

In connection with the above mentioned subject and reference your kind attention is drawn towards the fact that Second meeting of the District Environmental Planning Committee for the District Navsari is yet to be conveyed.

Recently, model District Environment Plan (DEP) is made available on CPCB website with regard to Hon'ble NGT order dated 26-09-2019 in the matter of OA 360 of 2018. The said model DEP covers 7 thematic areas capturing basic information on 64 action areas through about 220 data points, which are essentials part of District Environment Plan.

Hon'ble NGT order dtd. 17.09.2019 in the O.A. no. 829/2019 states "The District Magistrates may also cover the subject of coastal and marine pollution in the District Environment Plans to be operated with reference to order of this Tribunal dated 15.07.2019...."

GPCB, Head Office- Gandhinagar is following up this office about the action taken in this regard for the District of Navsari for its onward submission.

In view of above, it is **earnestly** requested to allot suitable date & time to convene the Second meeting of the committee . Alternately through circulating meeting , format of DEP may be circulated to the concern agencies /authorities for submission of the relevant details at the first instance.

This is for your kind information and necessary action please.
Thanking You,
Regards ,

Your Faithfully,
A G Patel
Regional Officer

CC TO:
The Member Secretary [Kind attn: Unit Head-Navsari]
Gujarat Pollution Control Board
Sector 10-A, Gandhinagar..... For information and further necessary action please in connection with the HO email dtd. 19/10/2019 , 16/11/2019.

O/C

in Navsari. The District Collector also suggested and every responsible authorities to come out with clear agenda with progress report.

The meeting is concluded with the thanks to the Chair.

Place:-Navsari

19/10/2019

ANNEXURE-IX

ATR OF KARNATAKA STATE

COMPLIANCE TO THE DIRECTIONS ISSUED BY CPCB UNDER SECTION 18(1)B OF THE WATER (PREVENTION AND CONTROL OF POLLUTION) ACT, 1974 TO PREVENT FURTHER DETERIORATION OF COASTAL WATERS.

Direction 1: Karnataka State Pollution Control Board shall ensure that local Urban bodies set up Sewage Treatmet Plant (STPs) of adequate capacity including Sewerage system to cover the entire local/urban areas and accordingly grant consent, the treated effluent shall comply with the standards

The complaince status is as follows :

1.1) **Effluent Treatment Plant (ETP)** :

Board is issuing consents to the industrial units only after ensuring that the units have provided ETP of adequate capacity and these units are periodically monitored. The list of industries along the coastline which are consented to discharge treated effleunts in to sea are listed in **Annexure-1.** These industries are having ETP of adequate capacities and complying with the prescribed standards.

1.2) **Sewage Treatment Plant :**

1.2.1) Urban Local Bodies (ULB):

The urban local bodies located along the coastline are 1) Mangalore City Corporation, 2) CMC Ullal, 3) TP Mulki, 4) CMC Udupi, 5) TMC Kaup, 6) TMC Kundapura, 7) TP Saligrama, 8) TMC Bhatkal, 9) TP Honavar, 10 TMC Kumta, 11) TMC Ankola and 12) CMC Karwar. Among these ULBs, Mangalore City Corporation is having sewerage network and having 4 number STPs, Udupi CMC is having partial sewerage network to cover core area of 25 % followed by terminal STP (12 MLD), CMC Karwar is having sewerage network to cover core area of 14% ending with terminal STP (1.5 MLD) and CMC Bhatakal is having STP to treat effluents from 25 % of the total area. Remaining household are having individual septic tank and soak pits to treat the sewage. Mangalore city corporation is also covered under smart city project of Govt of India. Apart from these, in

some of the ULBs, STP proposals are under pipeline. Details are enclosed as per **Annexure-2.** The tertiary treated sewage of Mangalore city corporation (MCC) is partially being used for industrial purpose by M/s MRPL (22.7% of total treated sewage) and for gardening purpose by Pilikula Nisarga Dhama(14%). Remaining treated sewage of Mangalore City Corporation is being discharged to sea. Monitoring is carried out every month and compiled analysis report for the year 2019 is enclosed as **Annexure-3.**

1.2.2) Infrastructure Projects :

Board has brought the residential apartments and commercial establishments under consent mechanism and is insisting these establshments to provide STPs. Accordingly, these establishments have provided fullfledged STPs to treat the sewage generated from them. There are total of 117 establishments altogether in the three coastal Districts of Karnataka viz., Dakshina Kannada, Udupi and Uttara Kannada. List of projects along with the STP capacity , consent status and final disposal is enclosed Annexure-4. Consents are being issued to residential apartments/commerical complexs to treat domestic effluent to urban reuse standards and use the treated sewage for toilet flushing, gardening and to discharge excess quantity to underground drainage system of local bodies.

1.2.3) Common Effluent Treatment Plant (CETP) :

There are 13 numbers of fish meal industries (cluster) located at Ullal having CETP to treat the trade effluent generated from their member units. Board has issued consent under the Water Act to treat the trade effluent and discharge the treated trade effluent to sea. Another, CETP is provided within the premises for Mangalore Special Economic Zone (MSEZ) to treat the trade effluents generated from industries located in the MSEZ area. The treated trade effluent are being discharged to sea through pipeline. Details of these CETP's are

70

3.3) Water Quality monitoring of Beaches done in connection with Ganesha festival :

The Board has monitoried water quality of beaches during Ganesha Festival in the coastal Districts of Dakshina Kannada and Uttara Kannada districts. Abstract of water quality monitoring carried out during 2019 are enclosed as **Annexure-9**

3.4) Treated Waste Water Quality Monitoring of 17 category Highly Polluting Industries :

Board is regularly monitoring treated effluent quality monitoring before discharging to sea by 17 category highly polluting Industries , namely, 1) M/s MRPL, 2) M/s BASF India Ltd., 3) M/s OMPL from Mangalore region, 4) M/s UPCL, Udupi and 5) M/s Grasim Industries Ltd, Binaga to verify the compliance. Abstract of treated effluent of industries are enclosed as **Annexure-10.** However, since 2010 onwards **M/s MCF Ltd** has adopted zero liquid discharge system, and presently recycling the treated trade effluent in the production process. Further, all 17 category industries have installed online monitoring system as per CPCB directions and connected online monitors to CPCB/KSPCB server.

3.5) Coastal Water Quality Monitoring by external agencies :

As per the consent conditions, M/s MRPL, M/s BASF India Ltd., M/s MCF , MSEZ from Mangalore region, M/s UPCL, Udupi and M/s Grasim Industries Ltd, Binaga have engaged the services of following research institutes to carryout coastal water quality monitoring and Plankton studies, bio-assy, and benthos around marine outfall point to ascertain impact of such discahrges since inception of respective industries. Industry wise monitoring reports carriedout by such institutes are enclosed as **Annexure-11(CD enclosed).**

a) Department of Aquatic Environment Management , Karnataka Veterinary , Animal and Fisheries Sciences University, College of Fisheries, Mangalore-575 002.

enclosed as **Annexure-5.** Abstract of analysis report of treated trade effluent monitored is enclsoed as **Annexure-6.**

Direction 2 : SPCB shall also make mandatory for industrial and commercial units to discharge their effluents within prescribed limits to coastal waters. SPCB shall provide inventory of all commercial /industrial activities along with thier quantity of effluent discahrge to coastal waters inclding their complaince status.

Details enclosed as **Annexure -1,2 and 4**

Direction 3 : KSPCB shall provide the water quality monitoring data of coastal water carried out either by SPCB or any other organisations/laboratory :

3.1) Coastal Water Monitoring :

Board is regularly monitoring the water quality of coastal waters at Panambur and Chitrapura beaches of Dakshina Kannada district and Coastal water at Padubidri of Udupi District. Compiled Analysis reports are enclosed as **Annexure-7**

3.2) Water Quality monitoring of Kasarkod beach in connection with Blue flag project .

The District Administration, Uttara Kannada is carrying out water quality monitoring of coastal water at Kasrakod beach in Honnavar, Uttara Kannada district under Blue Flag Beach project since 2018 thorugh NABL accredited laboratory. Abstract of water quality monitoring results is enclosed as **Annexure-8.** The coastal water sampels are collected by KSPCB, Regional Office-Karwar and handing over to them further analysis.

b) Central Marine Fisheries Research Institute, P.B. No. 244, Mangalore 575 001.

c) Fisherman's Guidance Bureau, Department of Studies in Marine Biology, Karnatak University Post Graduate Centre, Kodibag, Karwar- 581 303.

As per the study reports 'no adverse impact due to discharge of treated effluent by industries is reported'

Member Secretary
Karnataka State Pollution Control Board

Annexure 1

List of industries permitted to discharge treated trade effluent into Sea

Sl. No	Regional Office	Name of the Industry	Quantity of Treated Effluent in KLD	Mode of Disposal as per Consent Order	Status of Compliance
1	Mangaluru	Mangalore Refinery & Petrochemicals Ltd.(MRPL), Kuthethur, Via Katipalla, Mangalore,	30355	Into Sea after treatment	Complying
2		BASF India Ltd, Bala Village, SurathkalBajpe Road, Mangalore	850	Into Sea after treatment	Complying
3		Bawa Fish Meal And Oil Co.Sy No 15-3,15-4, Sashithlu Road, Mukka, Surthkal	49.5	Into Sea after treatment	Not confirming
4		HKA Bawa and sons (Bawa Fisheries), Sy.No.15-5/1, Sasihithlu Road, Mukka, Mangalore-575021	3.5	Into Sea after treatment	Not confirming
5		Sterling Foods, Sasihitlu, Haleyangady, Mangalore	45	Into Sea after treatment	Not confirming
6		Mukka Sea Food Industries Pvt Ltd, Sy No 12-3A, Sashithlu Road, Mukka, Surthkal	64	Into Sea after treatment	Not confirming
7		ONGC MRPL Ltd., Aromatic complex (OMPL) MSEZ Unit, Permude Village, Mangalore, Dakshina Kannada District	686.44	Into Sea after treatment	Complying
8	Udupi	Udupi Power Corporation, Padubidri Yellur, Nandikur, Udupi Tq& Dt.	177288 Cooling water+ 100 KLD treated sewage	Into Sea after treatment	Complying
9		Janatha Fish Meal & Oil Products, Manur Fisheries Road, Kota, Udupi Tq & Dist	316	Onland for Gardeining/ plantation, colling tower make up and excess into Sea	Complying
10		Yashaswi fish meal & oil company, Pithrody, Udyavara, Udupii.	143	Treated in ETP and reused for cooling tower make up and excess ids discharged in to Sea	Complying
11		Goan Fresh Marine Exports Pvt ltd, Manoor village, kota padekere, udupi Tq	47	Gardeining and plantaion after due treatment & exccess water should be discharged into 100meter inside sea	Complying

13		Karthik Fisheris ,Malpe, Udupi.	4	Discharge to Sea after due treatment	Complying
14		Yashaswini Fisheries (Unit-2), Sy.no.71/3, Balekudru, Hangurcutta, Udupi Tq & Dist	25.2	Discharge to river after due treatment in ETP	Not yet commissioned
15		Raj Fish Meal & Oil Company, Sy.no.262/1B4, Kodavoor village, Malpe, Udupi Tq & DistMalpe, Udupi	14	Sea after due treatment	Complying
16		Raj Fish Meal & Oil Co (Unit-II), Sy.no.262-1B1, Kodavoor village, Madhwaraj road, Udupi	22	Tratment in existing ETP of sisiter concern unit, of M/s Raj Fish oil co, unit-1	Complying
17	Karwar	Grasim Industries Limited Chemical Division (Aditya Birla Chemical Dividion) Binaga, Karwar, Uttara Kannada	1440	Discharge in to sea	Complying
18		Deejay Research And Breeding Farm, Christianwada, Bailore Post, , Honavar, Uttara Kannada	6	Discharge in to Sea	-
19		Anfal Marine Products, Sy. No. 270 & 271, Amadalli Village, Karwar	108	discharge into sea	Complying
20		Anugraha Aquatech, Sy. No.187 / 2A, 187 / 2B, Head Bunder, Vannalli Village, Kumta	6.4	discharging in to sea	-

Annexure-2

Status of providing Sewage treatment in Urabn Local Bodies & Consent status

Sl No	Regional Office	Name of Local Body	Population as on 2011 census	Qty. of Sewage generation in MLD	STP Provided/Not Provided	Consent status	Remarks
1	Mangaluru	Mangaluru Cty Corporation	488948	52.81	Provided	30.06.2015	
2		Mulki TP	17288	1.86	Not Provided	30.06.2012	
3		Ullal CMC	53773	5.81	Not Provided	NA	CFE issued on 10.05.2012. A case has been filed against CMC Ullal
4	Udupi	Udupi CMC	125306	19.5	12 MLD STP installed. But 5.5 MLD sewage is being treated	30.06.2017	Notice issued to apply for consent
5		CMC Kundapura	30441	3.1	3.1 MLD STP prposed & Work under Progress	30.06.2017	Notice issued to apply for consent
6		TMC Karkala	25800	1.7	3 MLD Oxidation pond exist, but not in operation condition.New STP proposed	30.06.2015	Notice issued to apply for consent
7		Kaup TMC	25877	1.3	Kaup is a Newly formed TMC.STP Proposed & land acquisition under progress	TMC formed in the year of 2017	Notice issued to apply for consent
8		Saligrama Town Panchayath	15138	0.85	-	30.06.2017	Notice issued to apply for consent
9	Karawr	CMC, Karwar	77139	1.5	Provided	30.06.2014	Notice issued
10		TMC, Ankola	22249	2.3	Not Provided	30.09.2019	Notice issued
11		TMC, Kumta	36719	3.3	Not Provided	30.06.2014	Notice issued
12		TP, Honnavar	19109	2.5	Not Provided	30.06.2019	Notice issued
13		TMC, Bhatkal	32000	1.0	Provided	30.06.2019	Notice issued

Annexure-3

Abstract of analysis report of treated domestic effluent collected from STP of Mangalore City Corporation (MCC) located at Jappinamogaru

Sl No.	Parameters Analysed	Unit	Standard	Results									
				23.01.18	14.03.18	23.04.18	23.05.18	18.06.18	14.08.18	23.10.18	25.01.19	27.04.19	19.08.19
1	pH	pH unit	6.9-9.0	7.1	7.1	7	7	7	6.9	6.8	7	7	6.7
2	Suspended Solids	mg/L	20	12	10	10	10	12	10	14	**64**	14	18
3	BOD (3 days @ 27 ^{0} C)	mg/L	10	4	4	9	8	3	3	8	5	**23**	3
4	COD	mg/L	50	41	45	38	42	34	39	45	30	--	--
5	Ammoniacal Nitrogen	mg/L	5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	--	--
6	TKN	mg/L	10	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	--	--

Abstract of analysis report of treated domestic effluent collected from STP of Mangalore City Corporation (MCC) located at Surathkal

	Parameters Analysed	Unit	Standard	Results									
				10.08.18	28.09.18	23.10.18	29.11.18	29.12.18	29.01.19	27.04.19	24.05.19	30.07.19	30.08.19
1	pH	pH unit	6.9-9.0	6.9	7.1	7.3	7.1	7.2	6.9	7.3	7.3	7.1	6.5
2	Suspended Solids	mg/L	20	12	16	12	8	14	18	16	16	14	16
3	BOD (3 days @ 27 ^{0} C)	mg/L	10	3	2	2	2	2	5	2	2	2	2
4	COD	mg/L	50	38	47	38	27	45	24	38	31	33	38
5	Ammoniacal Nitrogen	mg/L	5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
6	TKN	mg/L	10	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

Abstract of analysis report of treated domestic effluent collected from STP of Mangalore City Corporation (MCC) located at Pachanady

	Parameters Analysed	Unit	Standard	Results									
				19.11.19	10.12.18	28.02.19	27.04.19	15.05.19	25.06.19	19.07.19	07.08.19	20.09.19	21.10.19
1	pH	pH unit	6.9-9.0	6.9	7.2	6.9	7.4	7.2	7	6.8	6.9	6.9	7.1
2	Suspended Solids	mg/L	20	14	18	20	14	16	18	16	14	18	16
3	BOD (3 days @ 27 ^{0} C)	mg/L	10	6	8	**14**	10	16	2	3	3	2	2
4	COD	mg/L	50	45	48	**117**	--	--	--	--	--	--	--
5	Ammoniacal Nitrogen	mg/L	5	BDL	BDL	BDL	--	--	--	--	--	--	--
6	TKN	mg/L	10	BDL	BDL	BDL	--	--	--	--	--	--	--

Abstract of analysis report of treated domestic effluent collected from STP of Mangalore City Corporation (MCC) located at Kavoor

	Parameters Analysed	Unit	Standard	Results									
				19.12.18	28.01.19	28.02.19	27.04.19	15.05.19	25.06.19	19.07.19	19.08.19	20.09.19	21.10.19
1	pH	pH unit	6.9-9.0	7.1	7	6.9	7.3	7.3	7	6.7	6.7	7	7.3
2	Suspended Solids	mg/L	20	10	18	20	16	18	20	18	22	16	14
3	BOD (3 days @ 27 ^{0} C)	mg/L	10	3	3	7	25	**99**	2	6	3	2	2
4	COD	mg/L	50	40	28	50	--	--	--	--	--	--	--
5	Ammoniacal Nitrogen	mg/L	5	BDL	BDL	BDL	--	--	--	--	--	--	--
6	TKN	mg/L	10	BDL	BDL	BDL	--	--	--	--	--	--	--

Annexure-4

List of Infrastructure projects of Coastal line

Sl. No.	Name and address of the indutry	Category ROG,17-cat	Quantity of effluent generated in KLD (both sewage and trade)	Capacity of ETP/STP	Consent status	Location of discharge	Complaince status Conforming/not conforming.
1	Forum Fiza Mall, TS No 210, RS No 335, Attavara Village, Contonment Ward, Pandeshwara Road, Mangalore	RED	240	250	30.12.17	UGD	The water is proposed to be reused for gardening, flushing, HVAC requirement and excess shall be disposed to UGD
2	Solitaire, Sy No 93/1,2,3,4,6(P), 101/2(P), Boloor Village, Mangalore	ORANGE	85	100	30.09.23	UGD	
3	Fortuna (Karuna Infra Properties Pvt. Ltd.), R. S. No 73/1A2, Nagori Main Road, Alape, Mangalore	ORANGE	68.04	70		UGD	No discharge
4	Ivory Tower, R S No 762, 788, 782, 780/1B, 781, 766, 768/2, T S no 726(P), 704(P), 700, 706(P), 708/1B(P), 707(P), 722/2(P), 720/2(P), Corporation Khata No 5183, Attavar Village, Mangalore	ORANGE	133	60 (2 No's)	30.06.21	UGD	Water treated in STP is utilized for flushing and gardening.
5	Citi Damaris, City Builder's and Promoters, Plot No 12-2P2, 6th Block, Katipalla Village Mangalore	ORANGE	9.72	12		UGD	Disposal of treated effluent in gardening and excess to UGD
6	Ratna Apartment, Sy No 70/11(P4), Kadri Village, Mangalore	ORANGE	14.6	25		UGD	
7	Mahesh PU College, Sy No 4/1Q(P),4 5A(P), 11/6,11/9(P) Near Kottara Chowki Mangalore	RED	136.8	150	31.12.22	UGD	
8	MAK, T S No 32/1(P),30/2B(P1) & 30/2B(P2), R Sy No 187/2BP, 187/2B, 189-1 Attavara Village, Mangalore	RED	101	110	30.06.21	UGD	
9	Mourishka Park, RS No 342-3B, 341, 336, 336, Kodialbail Village, Mangalore	RED	200	200		UGD	
10	Kudva Grandeur, 167/3,167/4, Iddaya Village Surthkal, Mangalore	GREEN	9.5	9.5	31.12.26	UGD	
11	Inland Windsors, R S No 8-3B(P), 8-4A1P1(P), Padavu Village, Airport Road, Mangalore	RED	146	160	30.09.17	UGD	

12	City Garden Apartment, R Sy No 80/6P,Iddya Village, Surthkal, Mangalore	GREEN	6.5	10	31.12.26	UGD	Treated water is entirely used for flushing and gardening purposes
13	Masco Planet, Sy No 29/1A, Jappinamoagru, Opp Yenepoya College, Mangalore	GREEN	4	5	31.12.25	UGD	
14	Sacred Heart Church Sahhavana, Sy No 36/2C,(P),36/1,97/1(P),36/2B Iddya Village, Surthkal	ORANGE	19	25	30.09.23	UGD	
15	Planet SKS, T S No. 27/2P, 28/A1A, Village No87, Kadri, Mangalore	ORANGE	100	165		UGD	
16	Garden Apartment, Sy No 19/5A2,17/6(P),17-5(P),19-5B2,19/5A2, Anegundi Road Anegundi Junction Bejai, Mangalore	ORANGE	44.82	50	30.09.25	UGD	Water treated in STP is utilized for flushing and gardening. Excess is discharged to UGD of MCC
17	V-Pride, Sy No 160/3P7, Surthkal Village, Mangalore- Taluk, D K- District	ORANGE	21.6	25		UGD	
18	Xavier Plaza, Plot No 76/69(P), 75/1A Panchanady Mangaluru	ORANGE	29	40	30.9.22	UGD	
19	Samrudhi Apartment, Sy. No. 26-(P), Padukodi Village, Mangalore	ORANGE	7.29	15	30.09.25	UGD	Water treated in STP is utilized for flushing and gardening. Excess is discharged to UGD of MCC
20	Raheja Water Front, Sy. No. 31/3P1, 27/3, 27/1, 31/4A, 14/15, 24/31A,31/9(P), 31/10(P), 31/14, 25/2(P), 25/4, Kulai village, Mangalore, D K District	RED	240	290		UGD	Treated water shall be used for gardening and flushing.
21	Plama Grande, Sy No. 96/1(P), ,167/1B, Padavu Village, Mangalore	RED	122	130		UGD	Water treated in STP is utilized for flushing and gardening. Excess is discharged to UGD of MCC
22	Gallery Apartment, R S No 107/2A,107/2B, 88/1B,88/1C, 88/2, 107/3A,107/3B, Alape, Padil, Mangalore	ORANGE	95.34	105	30.09.29	UGD	Water treated in STP is utilized for flushing and gardening. Excess is discharged to land for irrigation

23	Vailankanni's Abode, Sy No 150 (P), Pinto Garden Marry Hill, Mangaluru	GREEN	8	10	31.12.26	UGD	
24	Bhandary Pavillion, Sy No 6-4P2/P2,61/3P2,61, Marakada Village, Kavoor Junction Mangalore	ORANGE	30.46	50	31.7.25	UGD	
25	Hill Streak, Sy No 117/A(P1), 117/1A(P2), 117/1AP(3) Jeppinamogaru & 45/1 of Kankanady Village Mangalore	ORANGE	48.6	50		UGD	
26	Skyline Blue Berry Hills, Sy. No. 136-1AP, Derebail village, Mangalore	ORANGE	24	35		UGD	Excess is used in landscaping
27	Abhiman Texas, Sy No 179,177,165,166, Near SCS Hospital Balmatta Road, Mangaluru	ORANGE	59.2	70	30.09.22	UGD	Treated water is proposed to be used for flushing and gardening within the premises
28	Marian Paradise Avenue, Sy. No. 58/2B(P), Padavu Village, Mangalore	GREEN	4.6	5	31.12.26	UGD	
29	Aqua Marine, TS No 833/1A RS No 85-10, Japinamogaru, Mangalore	ORANGE	31	40	30.09.23	UGD	
30	Plama Crest, R Sy No 17/38A,17/38B1,17/14(P),17/15(P), 17/39(P),17/40(P) at Hosabettu Village No51, Mangalore, D.K- district	ORANGE	21.18	25	31.12.25	UGD	
31	Pebble Beach, Sy No 25-2P1, Peebble Beach Beach Road Mukka	GREEN	8.1	10	31.12.25	UGD	Treated water is used for gardening
32	New Jeruzalem Heights, Sy No 128-12B2A, 129-7A2, 128-12A1, Behind Bus Stand, Kinnigolli, Talipady Village	GREEN	9.52	10	31.12.27	UGD	Treated water is used for gardening
33	Classique Sapphire, RS No 79/4A, 79/4B(P), village No 79, Padavu, Mangalore	ORANGE	93	100	30.09.15	UGD	
34	Residential Apartment by Abish Builders P. Ltd., Sy No 63/22,63/25,63/34, Iddya Village, Surthkal, Mangalore	ORANGE	47.38	70	30.09.22	UGD	
35	Maurishka Palace, No 70/3(P), 68/7A, 68/8A, Kadri Village, Mangalore	RED	209	250		UGD	
36	Yenepoya Creo, Sy No 743/1(P), Kadri Village Mangalore	ORANGE	60.8	70		UGD	
37	Premiro, R S No 48/3(P) Alape Village, Mangalore	ORANGE	47.88	50	30.09.22	UGD	
38	Broadway Elite, Sy No 17/40(P) 17/25,17/46B2(P) 17/46A,17/15(P),17/48,17/14(P) Hosabettu Village Mangalore	ORANGE	19.2	25	30.09.25	UGD	

39	The Promenade Apartment, Sy No 69/3A,69/6, Kadri Village Mangaluru	ORANGE	33.5	50		UGD	Treated water is proposed to be used for flushing and gardening within the premises
40	Pratheeksha, Sy No 46-9(P1),46-5A2(P3), 46-9(P), 46-2C(P) of Alape Village Mangalore	ORANGE	32.4	40	30.09.18	UGD	
41	Kalyani Antilia, Sy No 255/1A(P),255/3A,255/3A1(P), Surthkal Village Mangalore	GREEN	9.6	10	31.12.26	UGD	
42	Expert PU College, Sy No 57/2AP2,82/2,81/1, Arkula Village Mangalore	RED	241.2	280	30.6.22	UGD	Treated water is used for gardening and flushing
43	Willos, Sy No 28-3BP1,82-3BP10 & 82-2cp7, Neermarga Mangalore	ORANGE	43.2	50		UGD	Treated water is used for gardening and flushing
44	Godrej Alpine, Sy No No 235/1, AP16-P2, 234/A2, Yeyyady Padavu, Village, Mangalore, Dakshina Kannada District	ORANGE	67.5	100	30.09.17	UGD	Treated water is used for gardening and flushing
45	Amarnath Shanthi Sadan Building, Sy. No 167/1B, 167/2, Iddva Village, Surathkal	GREEN	10	10	31.12.25	UGD	
46	Marian Proxima, Sy No 39/15 (Part), 38/4(Part),37/13P2, Ashoknagar School Road, Near Urva Store, Mangaluru	ORANGE	41.5	50	30.09.25	UGD	Water treated in STP is utilized for flushing and gardening. Excess is discharged to UGD of MCC
47	Diya Systems Pvt. Ltd., SY No 11-8,4-10(P),4-3(P), Derebail Village, Bangrakulur Village, Mangaluru	RED	135	350	30.06.25	UGD	Water treated in STP is utilized for flushing and gardening
48	Icon Tower, Sy. No. 62/20A, 62/20AP, 70/2B1AP, 70/2A5A2P, 70/3P, 70/2C2P, 62/20P, 70/2C2P5, Iddya Village, Mangalore	ORANGE	50.64	80		UGD	
49	Matha Residency, R Sy No 52/1A3(P), No 49 Surthkal Village, Mangalore	ORANGE	23.35	25	30.09.25	UGD	The treated water shall be used in coconut plantations
50	Pranama Towers, R.S. No 14-10A2, Kodialbail B, Mangalore	ORANGE	25	30	30.09.28	UGD	
51	St Aloysius Institutions (Gonzaga), Sy. No 192, 193, 199, 194/A, B, 198/1A1, 198/A2, 198/B, Mangalore	ORANGE	29.88	35	30.9.21	UGD	Treated water is used for gardening , flushing and excess to UGD

52	Invenger complex, Sy No 296/1A(P), Kodialbail Village, Mangalore	ORANGE	25	25	30.9.28	UGD	Treated water is used for gardening , flushing and excess to UGD
53	Misty Meadows, Sy No 55/2A1P16, 55/2A1AP22, 55/2A1P1, 55/2A1P3, 55/2A1A2,55/2A1P17,55/2A3P2,55/2A1AP23,55/2A1AP31,55/2B2P4,55/2A1P,55/2B2P4, Kannur Village Mangaluru	GREEN	8	10		UGD	
54	Sapthagiri Arcade, Sy No. 666/93, Boloor Village, Mangalore	GREEN	9	10	31.12.33	UGD	
55	Samprathi, Sy No. 120/1A(P), Iddya Village, Mangalore	ORANGE	9.72	12		UGD	
56	Agraja Garden, Sy No 62/23(P),62/24,62/25,62/26, 62/27, Iddya, Surthkal, Mangaluru	ORANGE	23.76	25		UGD	Treated water is used for gardening and excess to UGD
57	Bhandary Heights, R S No 7P1, 2, 3, 4, 5, 6, 7, 9AP1, 2, 9A, Derebail, Mangalore	ORANGE	96.376	100	30.09.22	UGD	
58	Magnum Sky Villa, Sy No 284/3E, R S No 445 (Part), Nehru Avenue Cross Road Kodibail, Mangaluru	GREEN	8	10	31.12.33	UGD	Treated water is used for gardening and excess to UGD
59	96 PC Quarters, Sy No 208/1A1, Pandeshwara Attavara, Mangalore	ORANGE	52	100	30.9.29	UGD	
60	Nanda Gokul Residency, Rs No 10/7 & 10/13, Bejai, Kadri Village Mangaluru	ORANGE	33	40	30.9.23	UGD	
61	Monica Hlls, Sy No 41-4A(P), Urwa Store Bus Stand, Mangalore	ORANGE	15	15		UGD	Treated water is used for gardening and excess to UGD
62	Janapriya Arcade Residency lodging cum Commercial complex) , Sy No 52/5 (P), 52/4A1B(P), 52/4A1A (P), 52/3A1(P), Alape Village, Kannur, Mangaluru	GREEN	9.384	10	31.12.33	UGD	Treated water is used for gardening and car washing
63	Geovanni Apartment, Sy No 220/6(P), 220/7(P), 254/13C(P), 254/13E(P), 254/13B1(P), Padavu village, Mangalore	ORANGE	39.6	60		UGD	
64	Shanthala Lavakusha Residential Appartment, Sy No 52/4P1, Kadri B Village, Mangalore	ORANGE	16	25	30.09.23	UGD	
65	Shakthi Education Trust " Resdential School & College," Sy No 19-1A1,19-2, Padavu Village, Mangalore	ORANGE	72.5	80	30.9.23	UGD	Treated water is used for gardening and excess to UGD
66	Commercial Building by Sri Ramanath Rai, Sy No 254/3A5(P0 of Surthkal Village Khata No 1346, Mangaluru	ORANGE	15	15	30.9.22	UGD	

67	Maruvala Residency, Sy No 464/P,465/5,Near Venkataramana Temple Dongerkeri, Mangaluru	GREEN	8.641	10	31.12.27	UGD	
68	Gold Palace Onyx, R Sy No. 17/2D(P) & 18/2C(P), Near Indiana Hospital, Pumpwell, Mangalore	ORANGE	45	50	30.9.23	UGD	Treated water shall be used for gardening and flushing.
69	Coastal Karnataka Developers, Sy No 29/3,29/4A, Derebail VillageNo 88 Mangalore	ORANGE	25.92	30	30.9.22	UGD	
70	H R Educational Foundation, Sy No 66-4P(4P7),66-4P(4P8),59-1P1), 66-2(P4),66-2(P5), 62-2(P1P, aetc at Village Jappinmogaru-B, Mangalore	ORANGE	27.9	35	31.12.24	UGD	Treated water shall be used for gardening and flushing.
71	Balaji Green Park Apartment, Sy No 56/8, 56/8(P), 56/9(P),57/5, 57/5(P) 57/6(P)Kunjathabail Mangaluru	ORANGE	26	30	30.9.23	UGD	
72	Residential Apartment by Yamini Builders and Developers, T S No 1553/1A2A1A(P),Ladyhill, Mangalore	GREEN	6.48	7	31.12.28	UGD	Treated water is used for gardening and excess to UGD
73	Walk-In Arcadia, Sy No 83/1(P),83/10A(PP), Kadri B Village, Mangalore	ORANGE	18.3	30	30.9.23	UGD	
74	Little Sisters of the Poor, Sy No 33/1A, Alape Village, Mangaluru	ORANGE	12	25	30.9.23	UGD	
75	Abhiman Hills, T S No 26/1P2, P3, Attavara Village, Mangalore	ORANGE	47.52	50	8.3.26	UGD	
76	Siliconia, Sy No 34-1(B) Part, 34-2A, Munnur, Mangalore	RED	201.7	225	30.9.15	UGD	Treated water is completely utilized
77	Brigade Pinnacle, Sy No 57/B, 61/5, 61/6P1, 61/6P2, 61/7, 112/2A1, 121/B1, 121/2, Derebail Village, Mangalore	RED	208	210	30.9.17	UGD	Treated water is used for irrigation, flushing, washing pavements and driveways
78	West Gate Garden, Sy No 88-4A2A, Alape Village, Mangalore	ORANGE	78	95	30.9.23	UGD	Treated water is used for irrigation, flushing and gardening
79	City Max, Sy No 45/2AP1, Ullaibettu, Vamanjoor, Mangalore	GREEN	8.91	10	31.12.25	UGD	Treated water is used for gardening and excess to UGD
80	Lokapoorna Apartment, Sy No 22/2A1A2,22/2A1A1P9, Kannur Padil Road, Apale, Mangalore	GREEN	8	10	31.12.25	UGD	Treated water is used for gardening and excess to UGD
81	Silver Springs, Sy No 38/6A2(P), T S No 1562/1A1(P), Kodibail ,Village, Mangalore	ORANGE	11.61	15	30.9.23	UGD	Treated water is used for gardening and excess to UGD

82	Presidency Vive, R S No 364,364-(P) T S No 239, 239(P), 239-P6, Pandeshwara Mangaluru	ORANGE	25	25	30 9 20	UGD	
83	Residential Villas Project, Sy no 53/1(P),53/9 (P), Kadri Village Mangaluru	GREEN	6 5	10	31 12 28	UGD	
84	Residential Apartment by Smt. Susheela, Sy No 66/2(P Maroli Village Mangalore	ORANGE	19 4	20	30 9 28	UGD	
85	Sri Nidhi, Sy. No. 47/7E(P), Kankanady, Mangalore	ORANGE	18 9	25	31 12 25	UGD	
86	Bule Bearry Woods, Sy.no.377-2B/P1 and 59-P-8, Shivally village, Manchi, Udupi Tq & District	LO	100KLD	100KLD	30.09.2022	Onland for gardeining	Operation
87	Hirnya Builders, Sy.no.316/1P46, of shivally village, karamballi, Udupi Tq & District	LO	45KLD	45KLD	30.09.2021	Onland for gardeining	Operation
88	Abhimon Residency, Sy.no.27/1, Shimoga Road, Kollur village, Kundapura Tq Udupi District	SG	4KLD	5KLD	31.12.2022	Onland for gardeining	Operation
89	Swastik Enclave, Sy.no.118/6A2-P1, Kundapura Tq Udupi Dist	SG	12.42KLD	10KLD	One time consent	Onland for gardeining	Operation
90	Malpe Manipal Builders Pvt ltd. Sy no:316/P1 of Shivally, Udupi dist	LR	265KLD	250KLD	30.06.2022	Onland for gardeining	Operation
91	Vidhyodaya Public School, Sy. No. 31/9A, , Sy. No. 31/9A, 76 OF Badagabettu village, Udupi	LO	72KLD	100KLD	30.09.2023	Onland for gardeining	Operation
92	Kirthi Construction, Sy.No.74/6P2, 74/4A1P2, No.77, Shivalli Village, Udupi tq & Dist.	SG	8KLD	10KLD	31.12.2027	Onland for gardeining	Operation
93	Paradise Isle Beach Resort, Sy.no.289/1A and 319/3A, Kodavoor village, Amlpe, udupi	MR	39.6KLD	35KLD	30.09.2022	Onland for gardeining	Operation
94	Dr. B R Medows Residential Apartment, Sy.no.73/3A, 25/8, 25/10 of Ambalpady village, Udupi Tq & District	LO	94.5KLD	80KLD	30.09.2021	Onland for gardeining	Operation
95	Mandavi Builders, Mandavi Acropolis, Sy.no.126, 127/7,8,20,21 & 18/1,2,7,11 & 69 of Moodanidamboor Village, KM Marga, Udupi Tq & Dist	LR	168.75KLD	150KLD	30.06.2021	Onland for gardeining	Operation

96	Mandavi Palce Devolpers, Sy.no.84/4A, 4B1, 4B2, 18A1, 18AB2, Putthur village, Udupi Tq & Dist	LR	145KLD	240KLD	30.06.2021	Onland for gardeining	Operation
97	Mandavi Royal Prince, 86-1,86-2P2, 86-3,86-4,86-26, S.no 86-1,86-2P2, 86-3,86-26 of 77 shivalli village,udupi Tq & Distric	MO	27.8KLD	30KLD	30.09.2023	Onland for gardeining	Operation
98	Hi-Point Construction Pvt Ltd, Sy.no.206/2, 206/1AP2, 76, Herga village, Udupi Tq & Dist	MO	37.12KLD	40KLD	30.09.2017	Onland for gardeining	Operation
99	Sai Harsha Creaters, sy.no.117/1B3 of Badagabettu vilage, Udupi Tq & Dist	LO	37.12KLD	40KLD	30.09.2022	Onland for gardeining	Operation
100	Future Infra Builders & Devolpers, Sy.no.150/4A1, 150/4A2B, Alevoor Road, Manipal Udupi tq & Dist	SO	40KLD	30KLD	30.09.2021	Onland for gardeining	Operation
101	Commercial Complex - Kundapura (Sri. Chitrapura Math) sy.no.148/1H, Kundapura Tq & Udupi District.	SG	6KLD	5KLD	31.12.2029	Onland for gardeining	Operation
102	Keshava Construction & Realtors, Sy. No. 1340/E, 1340/A/1B, 1340/A2, Baad-III Village, Karwar	G	40 KLD	40 KLD	9/30/2017	Onland for gardeining	Not Conforming notice issued
103	Grasim Industries, Binaga, Karwar	17-cat	60	60	30-06-21	Onland for gardeining	Conforming
104	Project Sea Bird, Karwar	R	1591	3614	30-06-15 consent application forwarded to HO	Onland for gardeining	Conforming
105	NPC Ltd.,Kaiga, Karwar	R	750	0.5 MLD 0.375 MLD	30-06-21	Onland for gardeining	Conforming
106	NPC Ltd., Mallapur Township	O	1800	1800	30-06-20	Onland for gardeining	Conforming
107	Canara Health Care, Kumta	O	7	7	30-09-21	Onland for gardeining	Conforming
108	Sridevi Multispeciality, Honnavar	O	15	15	30-09-2022	Onland for gardeining	Conforming
109	Hotel & Allied Trades Pvt.Ltd., Donibail, Gokarn, Kumta	O	15.32	18	30-09-20	Onland for gardeining	Conforming

110	Hotel Samrudhi Sankruti, Gokarn, Kumta	G	7.5	9	31.12.27	Onland for gardeining	Conforming
111	Hotel Kamath Plus, Ankola	G	5	15	31-12-19	Onland for gardeining	-
112	KPC Ganeshgudi	O	75	75	30-06-2022	Onland for gardeining	Conforming
113	KPC Gerusoppa	O	40	65	30-06-2021	Onland for gardeining	-
114	KPC Kadra	O	540	540	30-06-2019	Onland for gardeining	Conforming
115	KPC Ambikanagar	O	230	125	30-06-2022	Onland for gardeining	Conforming

ANNEXURE-5

SL.No.	NAME OF THE CETP	CONSENT CAPACITY	DISCHARGE POINT	ONSNET VALIDIT	NO. OF MEMBER INDSUTRY
1	CETP of M/s Fish Meal and Oil Manufacturers Association	600KLD	Sea discharge after treatment	30.06.2022	Established to treat trade effluent generated from13 fish meal industries located at Ullal area.
2	Mangalore Special Economic Zone. Mangaluru	3.5MLD	Sea discharge after treatment	30.06.2021	Established by MSEZ to treat the effluent geneated in MESZ area. Presently 8 No. of industrires in MSEZ area.

Annexure-6

Abstract of analysis report of treated effluent collected from Common Effluent treatment Plant (provided form fish meal industries) located at Ullal, Mangaluru

Sl No.	Parameters Analysed	Unit	Standard	Results								
				09.12.16	06.04.17	05.05.17	01.02.18	28.05.18	11.01.19	24.01.19	25.03.19	27.03.19
1	pH	pH unit	6.9	7.5	8	7.5	8	8.1	7.2	7.2	7.1	7.2
2	Suspended Solids	mg/L	100	**5200**	**2502**	**1150**	**220**	**364**	20	22	26	82
3	BOD (3 days @ 27 ^{0} C)	mg/L	100	**11100**	**21600**	**9000**	**5800**	**1860**	2	**1020**	**252**	**345**
4	COD	mg/L	250	**23404**	**44508**	**17851**	**27210**	**5245**	14	**1707**	**2643**	**3086**
5	Oil and Grease	mg/L	10	**74**	**68**	**46**	**48**	**48**	--	**32**	**78**	**97**
6	Fluoride	mg/L	15	0.98	1.7	0.21	0.51	1.8	--	0.281	0.275	0.289
7	Sulphide	mg/L	5	**4.8**	**14.4**	**13.6**	**19.2**	**16**	--	**19.2**	**25**	**6**
8	Ammoniacal Nitrogen	mg/L	50	8.4	14	14	28	**84**	--	8	**169**	**182**
9	TKN	mg/L	50	10.64	16.8	17.92	36	**92**	--	10	**193**	**203**
10	Dissolved phosphate	mg/L	5	0.66	**15**	**7.12**	--	--	--	--	--	--
11	TRC	mg/L	1	BDL	BDL	BDL	BDL	BDL	--	BDL	BDL	BDL
12	Nitrate	mg/L	50	4.58	7.21	8.86	8.96	7.88	--	**51.2**	**67**	**58.4**
13	Iron	mg/L	3	2.118	**4.994**	1.517	0.344	1.24	--	0.722	0.645	1.512
14	Copper	mg/L	3	BDL	BDL	BDL	BDL	BDL	--	0.03	0.047	0.07
15	Lead	mg/L	0.1	0.036	BDL	BDL	BDL	BDL	--	0.071	BDL	0.367
16	Zinc	mg/L	15	BDL	0.469	0.001	0.003	BDL	--	0.038	0.613	0.118
17	Nickel	mg/L	3	0.036	BDL	BDL	0.035	BDL	--	BDL	0.059	0.252
18	Total Chromium	mg/L	2	BDL	BDL	BDL	BDL	BDL	--	BDL	0.053	BDL
19	Cadmium	mg/L	0.05	0.009	BDL	BDL	BDL	BDL	--	BDL	0.057	0.095

Abstract of Water Quality Monitoring results of Sea Water collected by the Board at Panambur beach for the period 01.04.2017 to 31.03.2018

Sl No.	Parameters Analysed	Unit	Standard	Monitored values -monthwise											
				17-Apr	17-May	17-Jun	17-Jul	17-Aug	17-Sep	17-Oct	17-Nov	17-Dec	18-Jan	18-Feb	18-Mar
1	pH	pH unit	6.5-8.5	7.5	7.8	7.5	7	7.6	7.1	6.5	6.8	7	7	7.2	7.1
2	BOD (3 days @ 27 ^{0} C)	mg/L	Max 3	1	1	1	1	1	1	1	1	1	1	1	1
3	Oil&Grease	mg/L	--	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
4	Suspended Solids	mg/L	---	30	26	18	32	20	28	24	18	12	26	22	20
5	D.O	mg/L	Min 4	6.7	6.4	6.5	6.6	6.5	6.5	6.5	6.5	6.4	6.5	6.6	6.5
6	Turbidity	NTU	Max 30	3	3	3	3	4	3	2	2	1	1	1	1

Abstract of Water Quality Monitoring results of Sea Water collected by the Board at Chitrapura beach for the period 01.04.2017 to 31.03.2018

Sl No.	Parameters Analysed	Unit	Standard	Monitored values -monthwise											
				17-Apr	17-May	17-Jun	17-Jul	17-Aug	17-Sep	17-Oct	17-Nov	17-Dec	18-Jan	18-Feb	18-Mar
1	pH	pH unit	6.5-8.5 pH Unit	7.5	7.6	7.6	7.6	7.3	7.6	6.7	6.9	6.9	7	7.1	7.2
2	BOD (3 days @ 27 ^{0} C)	mg/L	Max 3	1	1	1	1	1	1	1	1	1	1	1	1
3	Oil&Grease	mg/L	--	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
4	Suspended Solids	mg/L	---	16	28	22	48	26	32	20	22	18	28	26	22
5	D.O	mg/L	Min 4	6.6	6.5	6.6	6.4	6.4	6.6	6.6	6.6	6.5	6.5	6.4	6.6
6	Turbidity	NTU	Max30	2	3	4	3	3	4	3	2	1	1	1	1

Abstract of Water Quality Monitoring results of Sea Water collected by the Board at Panambur beach for the period 01.04.2018 to 31.03.2019

Sl No.	Parameters Analysed	Unit	Standard	Monitored values - monthwise											
				18-Apr	18-May	18-Jun	18-Jul	18-Aug	18-Sep	18-Oct	18-Nov	18-Dec	19-Jan	19-Feb	19-Mar
1	pH	pH unit	6.5-8.5	7	7.1	7	7.2	7	7.3	7.5	7.2	7	6.9	7.1	7
2	BOD (3 days @ 27 ^{0} C)	mg/L	Max 3	1	1	1	1	1	1	1	1	1	2	2	2
3	Oil&Grease	mg/L	--	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
4	Suspended Solids	mg/L	---	24	20	18	16	18	12	12	10	36	68	12	10
5	D.O	mg/L	Min 4	6.5	6.5	6.6	6.5	6.5	6.6	6.6	6.6	6.8	6.8	6.7	6.9
6	Turbidity	NTU	Max 30	1	1	1	1	1	1	1	1	1	1	1	1

Abstract of Water Quality Monitoring results of Sea Water collected by the Board at Chitrapura beach for the period 01.04.2018 to 31.03.2019

Sl No.	Parameters Analysed	Unit	Standard	Monitored values - monthwise											
				18-Apr	18-May	18-Jun	18-Jul	18-Aug	18-Sep	18-Oct	18-Nov	18-Dec	19-Jan	19-Feb	19-Mar
1	pH	pH unit	6.5-8.5 pH Unit	7	7	7.2	7.1	7.5	7.2	7	7.1	7.1	6.9	7	7
2	BOD (3 days @ 27 ^{0} C)	mg/L	Max 3	1	1	1	1	1	1	1	1	1	1	2	2
3	Oil&Grease	mg/L	--	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
4	Suspended Solids	mg/L	---	18	24	22	18	14	16	8	10	54	22	12	12
5	D.O	mg/L	Min 4	6.6	6.6	6.6	6.6	6.6	6.5	6.5	6.7	6.9	6.9	6.8	6.9
6	Turbidity	NTU	Max30	1	1	1	1	1	1	1	1	1	1	1	1

Abstract of Water Quality Monitoring results of Sea Water collected by the Board at Panambur beach for the period 01.04.2019 to 31.10.2019

Sl No.	Parameters Analysed	Unit	Standard	Monitored values-monthwise						
				19-Apr	19-May	19-Jun	19-Jul	19-Aug	19-Sep	19-Oct
1	pH	pH unit	6.5-8.5	7.4	7.3	7.1	7	6.9	7	7
2	BOD (3 days @ 27 ^{0} C)	mg/L	Max 3	2	2	2	2	2	2	2
3	Oil&Grease	mg/L	--	BDL	BDL	BDL	BDL	BDL	BDL	BDL
4	Suspended Solids	mg/L	---	10	14	12	16	14	14	16
5	D.O	mg/L	Min 4	6.8	6.8	6.9	6.9	6.8	6.9	6.8
6	Turbidity	NTU	Max 30	1	1	1	1	1	1	1

Abstract of Water Quality Monitoring results of Sea Water collected by the Board at Chitrapura beach for the period 01.04.2019 to 31.10.2019

Sl No.	Parameters Analysed	Unit	Standard	RESULT						
				19-Apr	19-May	19-Jun	19-Jul	19-Aug	19-Sep	19-Oct
1	pH	pH unit	6.5-8.5 pH Unit	7.4	7.4	7.2	7	7	7.1	7.4
2	BOD (3 days @ 27 ^{0} C)	mg/L	Max 3	2	2	2	2	2	2	2
3	Oil&Grease	mg/L	--	BDL	BDL	BDL	BDL	BDL	BDL	BDL
4	Suspended Solids	mg/L	---	8	16	12	16	12	16	16
5	D.O	mg/L	Min 4	6.9	6.7	6.9	6.9	6.6	7	7
6	Turbidity	NTU	Max30	1	1	1	1	1	1	1

Annexure- 7

Abstract of analysis results of Sea water monitored at Padubidri during the period 01/01/2018 from 30/11/2019

Date of Sampling	Sea Water (Parameters Analysed)			
	P^H	BOD (mg/L)	DO (mg/L)	Turbidity NTU
Standards	**6.5-8.5**	**Max 3**	**Min 3**	**Max 30**
19/01/2018	7.1	1	6.5	1
27/02/2018	7	1	6.5	1
22/03/2018	7.2	2	6.5	1
28/04/2018	6.8	2	6.6	1
28/05/2018	7	1	6.5	1
12/6/2018	7	2	6.6	1
9/7/2018	7.1	2	6.5	1
18/7/2018	7.2	2	6.5	1
26/09/2018	7	1	6.5	1
15/10/2018	7.5	1	6.5	1
21/11/2018	7.3	2	6.5	1
14/12/2018	7.2	2	6.5	1
10/1/2019	7.2	2	6.6	1
13/02/2019	7.1	2	6.5	1
1/3/2019	7	2	6.6	1
29/04/2019	7.3	2	6.8	1
30/05/2019	7.1	2	6.9	1
4/6/2019	7.2	2	6.9	1
8/7/2019	7	2	6.9	1
2/8/2019	7.1	2	7	1
3/9/2019	7.1	2	6.9	1
18/10/2019	7	2	7	1

ANNEXURE-8

SEA WATER QUALITY OF ARABIAN SEA AT ECOTOURISM CENTRE,KASARKOD,HONAVAR

Date of Sample Collection	Sample Location	Parameters											
		Physico-Chemical Results										Microbiology Results	
		pH	DO	Colour & Odur	Turbidity	Floating matter	Oil & Grea	BOD	TDS	COD	EC	Faecal Coli	Streptococci
16-Oct-18	S1	7.76	6	BDL& Unobjectionable	BDL(DL 0.1)	Nil	11.6	45	49000	108.86	59000	2	16
	S2	8.01	6.2	BDL& Unobjectionable	BDL(DL 0.1)	Nil	18.8	290	48000	738.72	57000	6	8
	S3	8.12	5.9	BDL& Unobjectionable	BDL(DL 0.1)	Nil	6	405	49000	1010.88	58000	4	12
	S4	8.08	6.3	BDL& Unobjectionable	BDL(DL 0.1)	Nil	8.4	38.4	48000	93.31	57000	4	48
	S5	8.11	6	BDL& Unobjectionable	BDL(DL 0.1)	Nil	9.6	375	49000	933.12	59000	12	608
15-Nov-18	S1	8.37	6	BDL& Unobjectionable	BDL(DL 0.1)	Nil	7	2.4	46000	51.37	54000	1	13
	S2	8.38	5.8	BDL& Unobjectionable	BDL(DL 0.1)	Nil	BDL(DL 2)	2.3	46000	1225.1	54000	8	7
	S3	8.35	6.1	BDL& Unobjectionable	BDL(DL 0.1)	Nil	11.4	2.7	45000	948.48	53000	6	8
	S4	8.47	5.2	BDL& Unobjectionable	BDL(DL 0.1)	Nil	5.8	1.9	45000	75.08	53000	4	32
	S5	8.48	5.3	BDL& Unobjectionable	BDL(DL 0.1)	Nil	2.4	2.1	46000	1106.56	54000	9	294
15-Dec-18	S1	8.48	6.7	BDL& Unobjectionable	BDL(DL 0.1)	Nil	9.8	2.4	51000	BDL(<20)	61000	3	8
	S2	8.43	6.1	BDL& Unobjectionable	BDL(DL 0.1)	Nil	BDL(DL 2)	2.3	50000	BDL(<20)	61000	6	5
	S3	8.47	6.2	BDL& Unobjectionable	BDL(DL 0.1)	Nil	7.6	2.3	51000	BDL(<20)	61000	9	7
	S4	8.47	6.1	BDL& Unobjectionable	BDL(DL 0.1)	Nil	7.2	2.4	51000	BDL(<20)	61000	6	19
	S5	8.49	6.3	BDL& Unobjectionable	BDL(DL 0.1)	Nil	2.4	2.2	51000	BDL(<20)	57000	7	193
16-Jan-19	S1	8.14	6.5	BDL(DL1)& Unobjectionable	BDL(DL 0.1)	Nil	8.3	2.4	45000	BDL(<20)	57000	<2	<2
	S2	8.22	6.4	BDL(DL1)& Unobjectionable	BDL(DL 0.1)	Nil	BDL(DL 2)	2.5	45000	BDL(<20)	57000	<2	<2
	S3	8.16	6.3	BDL(DL1)& Unobjectionable	BDL(DL 0.1)	Nil	6.2	2.8	44000	BDL(<20)	56000	<2	<2
	S4	8.2	6.5	BDL(DL1)& Unobjectionable	BDL(DL 0.1)	Nil	5.6	2.1	44000	BDL(<20)	57000	<2	<2
	S5	8.13	6.3	BDL(DL1)& Unobjectionable	BDL(DL 0.1)	Nil	BDL(DL 2)	2.7	45000	BDL(<20)	57000	<2	<2
15-Feb-19	S1	8.15	5.2	BDL(DL1)& Unobjectionable	BDL(DL 0.1)	Nil	4.4	2.1	44000	BDL(<20)	54000	<2	<2
	S2	8.18	5.1	BDL(DL1)& Unobjectionable	BDL(DL 0.1)	Nil	6.8	2.3	44000	BDL(<20)	54000	<2	<2
	S3	8.25	5	BDL(DL1)& Unobjectionable	BDL(DL 0.1)	Nil	BDL(DL 2)	2.2	44000	BDL(<20)	55000	<2	<2
	S4	8.23	5.4	BDL(DL1)& Unobjectionable	BDL(DL 0.1)	Nil	7.2	2.4	45000	BDL(<20)	55000	<2	<2
	S5	8.22	5.8	BDL(DL1)& Unobjectionable	BDL(DL 0.1)	Nil	BDL(DL 2)	2.5	45000	BDL(<20)	55000	<2	<2
16-Mar-19	S1	8.26	4.3	BDL(DL1)& Unobjectionable	BDL(DL 0.1)	Nil	4.9	BDL(DL2)	48000	BDL(<20)	59000	14	4
	S2	8.27	4.7	BDL(DL1)& Unobjectionable	BDL(DL 0.1)	Nil	4.3	BDL(DL2)	48000	BDL(<20)	60000	11	3
	S3	8.18	5.8	BDL(DL1)& Unobjectionable	BDL(DL 0.1)	Nil	3	BDL(DL2)	46000	BDL(<20)	57000	16	12
	S4	8.31	5.7	BDL(DL1)& Unobjectionable	BDL(DL 0.1)	Nil	3.2	BDL(DL2)	48000	BDL(<20)	59000	17	9
	S5	8.24	5.6	BDL(DL1)& Unobjectionable	BDL(DL 0.1)	Nil	3	BDL(DL2)	48000	BDL(<20)	59000	20	8
16-Apr-19	S1	8.22	5.5	BDL(DL1)& Unobjectionable	BDL(DL 0.1)	Nil	4	BDL(DL2)	38000	BDL(<20)	50000	7	3
	S2	8.26	5.5	BDL(DL1)& Unobjectionable	BDL(DL 0.1)	Nil	8.5	BDL(DL2)	39000	BDL(<20)	51000	9	5
	S3	8.24	5.5	BDL(DL1)& Unobjectionable	BDL(DL 0.1)	Nil	5	BDL(DL2)	38000	BDL(<20)	51000	5	8
	S4	8.26	5.5	BDL(DL1)& Unobjectionable	BDL(DL 0.1)	Nil	6	BDL(DL2)	38000	BDL(<20)	51000	6	5
	S5	8.26	5.4	BDL(DL1)& Unobjectionable	BDL(DL 0.1)	Nil	8	BDL(DL2)	38000	BDL(<20)	51000	3	4
15-May-19	S1	8.19	5.6	BDL(DL1)& Unobjectionable	BDL(DL 0.1)	Nil	3.4	BDL(DL2)	41000	BDL(<20)	55000	<2	<2
	S2	8.28	5.8	BDL(DL1)& Unobjectionable	BDL(DL 0.1)	Nil	4.6	BDL(DL2)	40000	BDL(<20)	54000	<2	<2
	S3	8.28	5.6	BDL(DL1)& Unobjectionable	BDL(DL 0.1)	Nil	4.4	BDL(DL2)	42000	BDL(<20)	56000	<2	<2
	S4	8.27	5.4	BDL(DL1)& Unobjectionable	BDL(DL 0.1)	Nil	5	BDL(DL2)	41000	BDL(<20)	55000	<2	<2
	S5	8.27	5.6	BDL(DL1)& Unobjectionable	BDL(DL 0.1)	Nil	5.2	BDL(DL2)	42000	BDL(<20)	56000	<2	<2
15-Jun-19	S1	7.88	4.9	BDL(DL1)& Unobjectionable	BDL(DL 0.1)	Nil	5.2	BDL(DL2)	40000	BDL(<20)	54000	13	<2
	S2	7.87	4.9	BDL(DL1)& Unobjectionable	BDL(DL 0.1)	Nil	BDL(DL2)	BDL(DL2)	40000	BDL(<20)	53000	34	<2
	S3	7.9	5.3	BDL(DL1)& Unobjectionable	BDL(DL 0.1)	Nil	4.6	BDL(DL2)	37000	BDL(<20)	50000	17	<2

	S4	8.09	5.1	BDL(DL1)& Unobjectionable	BDL(DL 0.1)	Nil	BDL(DL2)	BDL(DL2)	37000	BDL(<20)	50000	<2	<2
	S5	7.96	5.1	BDL(DL1)& Unobjectionable	BDL(DL 0.1)	Nil	BDL(DL2)	BDL(DL2)	38000	BDL(<20)	51000	<2	<2
17-Jul-19	S1	7.89	2.8	BDL(DL1)& Unobjectionable	BDL(DL 0.1)	Nil	4	BDL(DL2)	30000	BDL(<20)	40000	<2	<2
	S2	7.99	2.7	BDL(DL1)& Unobjectionable	BDL(DL 0.1)	Nil	BDL(DL2)	BDL(DL2)	30000	BDL(<20)	40000	<2	<2
	S3	8.04	2.2	BDL(DL1)& Unobjectionable	BDL(DL 0.1)	Nil	BDL(DL2)	BDL(DL2)	30000	BDL(<20)	40000	<2	<2
	S4	8.03	2.5	BDL(DL1)& Unobjectionable	BDL(DL 0.1)	Nil	BDL(DL2)	BDL(DL2)	30000	BDL(<20)	40000	<2	<2
	S5	7.98	3.4	BDL(DL1)& Unobjectionable	BDL(DL 0.1)	Nil	BDL(DL2)	BDL(DL2)	30000	BDL(<20)	40000	<2	<2
16-Aug-19	S1	8.01	4.3	BDL(DL1)& Unobjectionable	1.6	Nil	BDL(DL2)	BDL(DL2)	32000	BDL(<20)	41000	240	<2
	S2	8.12	4.5	BDL(DL1)& Unobjectionable	1.8	Nil	2.6	BDL(DL2)	27980	BDL(<20)	29000	23	<2
	S3	7.95	4.6	BDL(DL1)& Unobjectionable	1.7	Nil	BDL(DL2)	BDL(DL2)	32000	BDL(<20)	43000	220	<2
	S4	8.05	4.1	BDL(DL1)& Unobjectionable	1.4	Nil	BDL(DL2)	BDL(DL2)	33000	BDL(<20)	43000	<2	<2
	S5	7.99	4.4	BDL(DL1)& Unobjectionable	1.8	Nil	BDL(DL2)	BDL(DL2)	32000	BDL(<20)	42000	130	<2
16-Sep-19	S1	7.96	7	BDL(DL1)& Unobjectionable	4.6	Nil	BDL(DL2)	BDL(DL2)	36000	BDL(<20)	48000	<2	<2
	S2	8.04	6.4	BDL(DL1)& Unobjectionable	4.2	Nil	BDL(DL2)	BDL(DL2)	35954	BDL(<20)	48000	<2	<2
	S3	7.89	7.9	BDL(DL1)& Unobjectionable	4.6	Nil	BDL(DL2)	BDL(DL2)	35000	BDL(<20)	47000	<2	<2
	S4	7.87	6.1	BDL(DL1)& Unobjectionable	3.5	Nil	BDL(DL2)	BDL(DL2)	35000	BDL(<20)	47000	<2	<2
	S5	7.93	6.7	BDL(DL1)& Unobjectionable	6.4	Nil	BDL(DL2)	BDL(DL2)	36000	BDL(<20)	48000	<2	<2
15-Oct-19	S1	8.08	5.7	BDL(DL1)& Unobjectionable	15.6	Nil	BDL(DL2)	BDL(DL2)	38000	BDL(<20)	50000	<2	<2
	S2	8.07	6	BDL(DL1)& Unobjectionable	11.6	Nil	BDL(DL2)	2	37000	BDL(<20)	49000	<2	<2
	S3	8.07	6.3	BDL(DL1)& Unobjectionable	20.4	Nil	BDL(DL2)	BDL(DL2)	36000	BDL(<20)	49000	<2	<2
	S4	8.11	6.1	BDL(DL1)& Unobjectionable	18.1	Nil	BDL(DL2)	BDL(DL2)	38000	BDL(<20)	50000	<2	<2
	S5	8.14	6.1	BDL(DL1)& Unobjectionable	11.2	Nil	BDL(DL2)	BDL(DL2)	36000	BDL(<20)	48000	<2	<2
16-Nov-19	S1	8.01	6.3	BDL(DL1)& Unobjectionable	4.2	Nil	BDL(DL2)	BDL(DL2)	41000	BDL(<20)	51000	<2	<2
	S2	8.16	6.1	BDL(DL1)& Unobjectionable	4.5	Nil	BDL(DL2)	BDL(DL2)	38000	BDL(<20)	47000	<2	<2
	S3	8.02	5.6	BDL(DL1)& Unobjectionable	3.4	Nil	BDL(DL2)	BDL(DL2)	39000	BDL(<20)	48000	<2	<2
	S4	8.04	5.8	BDL(DL1)& Unobjectionable	3.2	Nil	BDL(DL2)	BDL(DL2)	40000	BDL(<20)	49000	<2	<2
	S5	8.19	5.9	BDL(DL1)& Unobjectionable	5.1	Nil	BDL(DL2)	BDL(DL2)	37000	BDL(<20)	46000	<2	<2
Tolerance Limit for Class SW-II waters*		**6.5-8.5**	**4.0 mg/l or 50% saturation value whichever is higher**	**No Noticeable Colour or offensive odour**	**30**	**Nothing obnoxious**	**10**	**3**	-	-		**500/100ml(MPN)**	

Annexure 9

Analysis Report of Water Samples collected during Ganesh Festival -2018-19

Regional Office : Mangalore, District; Dakshina Kannada

Name of the Water Body	Date of Sample collection	Sample No	Water Samples														
			UNITS														
			pH unit	mg/l	mg/l	mg/l	µohms/cm	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
			pH	BOD	SS	DO	Conduc tivity	TDS	Po_4	No_3	Fe	Cu	Pb	Zn	Ni	Cr	Cd
6.Panambur Beach	11.09.2018	448	7	1	10	5.9	46042	24092	0.008	61.5	0.452	BDL	0.06	0.018	BDL	BDL	BDL
	12.09.2018	466	7	1	8	6.2	39050	20090	0.037	49.8	0.441	BDL	BDL	BDL	BDL	BDL	BDL
	13.09.2018	473	7.3	3	10	6	59050	20065	0.0048	51	0.383	BDL	BDL	BDL	BDL	BDL	BDL
	14.09.2018	481	7	1	12	5.8	45070	23090	0.018	62.7	0.407	BDL	BDL	BDL	BDL	BDL	BDL
	16.09.2018	503	7.6	1	10	6.8	47050	25032	0.0028	63	1.817	BDL	BDL	BDL	BDL	BDL	BDL
	18.09.2018	515	7.5	1	10	7.2	44000	24022	0.0088	52.3	BDL	BDL	0.002	BDL	BDL	BDL	BDL
	20.09.2018	526	7	1	8	6.5	47050	24075	0.0052	51.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL
6.Chitrapura Beach	11.09.2018	449	6.2	1	8	4.7	47,050	24,090	0.014	61.8	0.822	BDL	BDL	0.007	BDL	BDL	BDL
	12.09.2018	465	6.2	1	6	6	38,062	20,065	0.055	51	0.425	BDL	BDL	0.125	BDL	BDL	BDL
	13.09.2018	474	7	8	8	4.8	39,025	20,088	0.01	50.8	0.513	BDL	BDL	0.166	BDL	BDL	BDL
	14.09.2018	480	6.1	1	10	4.8	45,025	23,085	0.03	52.7	0.371	BDL	BDL	0.023	BDL	BDL	BDL
	16.09.2018	502	7.4	1	10	5.3	45,050	24,078	0.0048	62.4	0.391	BDL	BDL	BDL	BDL	BDL	BDL
	18.09.2018	516	7	1	8	6.2	43,080	23,045	0.0024	52.6	BDL	BDL	BDL	0.089	BDL	BDL	BDL
	20.09.2018	525	6.7	1	10	6.8	46,700	24,095	0.0072	52.7	BDL	BDL	0.012	BDL	BDL	BDL	BDL

Note1 The above results pertain only to the sample tested 2 The method of analysis is as per the Standard Method for the examination of Water and Waste Water, and Indian Standard Publication
3 ND Not detected 4 BDL Below detection limit

ANNEXURE-9

Analysis Report of Water and Soil Samples collected during Ganesh Festival -2019-20

Regional Office ; Mangalore, District: Dakshina Kannada

Name of the Water Body	Date of Sample collection	Sample No	Water Samples														
			UNITS														
			pH unit	mg/l	mg/l	mg/l	µohms/cm	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
			pH	BOD	SS	DO	Conductivity	TDS	PO_4	NO_3	Fe	Cu	Pb	Zn	Ni	Cr	Cd
6.Panambur Beach	30.08.2019	466	7.3	1	12	6.4	32080	16466	0.027	22.4	0.05	BDL	BDL	0.01	BDL	BDL	BDL
	31.08.2019	486	7.4	1	12	7	42280	22460	0.0112	64.3	0.05	BDL	BDL	0.01	BDL	BDL	BDL
	01.09.2019	493	6.5	1	10	6	33850	17830	0.012	45.7	0.05	BDL	BDL	0.01	BDL	BDL	BDL
	03.09.2019	501	7.5	1	10	6.2	38510	19530	0.0088	53.5	0.08	BDL	BDL	0.01	BDL	BDL	BDL
	05.09.2019	556	7.1	1	12	6.1	50420	16240	0.016	47.3	0.08	BDL	BDL	0.013	BDL	BDL	BDL
	07.09.2019	570	7.2	1	12	6.3	57030	14160	0.0188	50.2	0.14	BDL	BDL	0.01	BDL	BDL	BDL
	09.09.2019	581	7	1	10	6.9	26930	11740	0.0217	49.8	0.12	BDL	BDL	0.01	BDL	BDL	BDL
	11.09.2019	599	7	1	12	6.7	23786	11060	0.0056	43.1	0.12	BDL	BDL	0.013	BDL	BDL	BDL
	13.09.2019	614	7.3	1	10	6.8	53180	17970	0.0216	37.8	0.12	BDL	BDL	0.013	BDL	BDL	BDL
7.Chitrapura Beach	30.08.2019	467	7.1	1	12	6.5	33970	17930	0.024	55.9	0.04	BDL	BDL	0.01	BDL	BDL	BDL
	31.08.2019	485	7	1	10	6.7	41670	22210	0.0084	64.1	0.04	BDL	BDL	0.01	BDL	BDL	BDL
	01.09.2019	494	6	1	12	6.2	30760	15280	0.0112	49.9	0.06	BDL	BDL	0.012	BDL	BDL	BDL
	03.09.2019	500	7.5	1	10	6.3	37690	19920	0.0068	54.4	0.05	BDL	BDL	0.012	BDL	BDL	BDL
	05.09.2019	557	7.3	1	10	6.1	50640	16770	0.0088	47.4	0.05	BDL	BDL	0.01	BDL	BDL	BDL
	07.09.2019	569	7	1	12	6.6	50900	16430	0.0172	49	0.08	BDL	BDL	0.014	BDL	BDL	BDL
	09.09.2019	582	7.1	1	12	6.4	27730	11340	0.0172	49.5	0.08	BDL	BDL	0.014	BDL	BDL	BDL
	11.09.2019	598	6.9	1	10	6.1	29980	15830	0.004	43.3	0.08	BDL	BDL	0.014	BDL	BDL	BDL
	13.09.2019	615	7.4	1	12	6.1	32920	17810	0.02	37.7	0.08	BDL	BDL	0.014	BDL	BDL	BDL

Note1 The above results pertain only to the sample tested 2. The method of analysis is as per the Standard Method for the examination of Water and Waste Water, and Indian Standard Publication
3. ND. Not detected 4. BDL. Below detection limit

ANNEXURE-9

KARNATAKA STATE POLLUTION CONTROL BOARD

REGIONAL LABORATORY, DHARWAD

Analysis Report of Water samples collected during Ganesha Festival **2019**

Sample Collected By : R.O. KARWAR

Sl. No	Name of the water body	CC/ CMC /TMC/TP /BB/MP/ NAC	Taluk	District	Date of sample collection	Sample No.	WATER mg/l																	Reg. Off
							pH	DO	Cond µs/cm	BOD	SS	TDS	Phosphate	Nitrate, N	Pb	Cd	Cu	Zn	Fe	Hg	Cr^{+6}	Ni		
1	Arabian Sea Water Near Boating Center, Aligadda,Bait hkol	TMC	Karwar	Karwar	30.8.2019	404	7.7	....	15000	2.2	40	9760	0.011	0.025	BDL	BDL	BDL	BDL	0.304	BDL	BDL	BDL	BDL	KWR
					31.8.2019	413	7.7	....	14950	2.8	40	9720	0.012	0.015	BDL	BDL	BDL	BDL	0.333	BDL	BDL	BDL	BDL	KWR
					1.9.2019	532	7.1	....	16758	2.3	60	10880	0.016	0.012	BDL	BDL	BDL	BDL	0.324	BDL	BDL	BDL	BDL	KWR
					3.9.2019	541	7.7	....	18593	2.5	70	12080	0.021	0.063	BDL	BDL	BDL	BDL	0.317	BDL	BDL	BDL	BDL	KWR
					5.9.2019	595	6.8	....	17250	3.1	60	11220	0.026	0.049	BDL	BDL	BDL	BDL	0.308	BDL	BDL	BDL	BDL	KWR
					7.9.2019	604	6.9	....	18253	3.2	80	11860	0.019	0.062	BDL	BDL	BDL	BDL	0.316	BDL	BDL	BDL	BDL	KWR
					9.9.2019	695	7.1	....	16480	2.5	60	10720	0.020	0.058	BDL	BDL	BDL	BDL	0.287	BDL	BDL	BDL	BDL	KWR
					11.9.2019	704	7.4	....	15360	2.4	50	9980	0.022	0.019	BDL	BDL	BDL	BDL	0.278	BDL	BDL	BDL	BDL	KWR
					13.9.2019	783	7.9	....	16120	2.6	50	10480	0.016	0.027	BDL	BDL	BDL	BDL	0.309	BDL	BDL	BDL	BDL	KWR
2	Tagore Beach, Karwar	TMC	Karwar	Karwar	30.8.2019	407	7.8	....	13240	1.8	40	8620	0.012	0.024	BDL	BDL	BDL	BDL	0.286	BDL	BDL	BDL	BDL	KWR
					31.8.2019	416	7.7	....	14850	2.4	50	9640	0.010	0.031	BDL	BDL	BDL	BDL	0.251	BDL	BDL	BDL	BDL	KWR
					1.9.2019	535	7.5	....	12310	2.6	60	8020	0.018	0.036	BDL	BDL	BDL	BDL	0.636	BDL	BDL	BDL	BDL	KWR
					3.9.2019	544	7.6	....	15620	2.8	80	10160	0.024	0.041	BDL	BDL	BDL	BDL	0.632	BDL	BDL	BDL	BDL	KWR
					5.9.2019	598	6.9	....	13740	3.3	60	8940	0.021	0.039	BDL	BDL	BDL	BDL	0.633	BDL	BDL	BDL	BDL	KWR
					7.9.2019	607	6.8	....	15850	3.1	70	10320	0.018	0.021	BDL	BDL	BDL	BDL	0.639	BDL	BDL	BDL	BDL	KWR
					9.9.2019	698	7.3	....	12510	2.3	60	8140	0.023	0.025	BDL	BDL	BDL	BDL	0.647	BDL	BDL	BDL	BDL	KWR
					11.9.2019	707	7.5	....	14852	2.6	50	9660	0.021	0.019	BDL	BDL	BDL	BDL	0.636	BDL	BDL	BDL	BDL	KWR
					13.9.2019	786	7.8	....	15247	2.2	60	9920	0.019	0.029	BDL	BDL	BDL	BDL	0.582	BDL	BDL	BDL	BDL	KWR
3	Alvewada, Kodibagh, Karwar(Kali River)	TMC	Karwar	Karwar	30.8.2019	410	7.8	....	14740	2.3	50	9580	0.010	0.031	BDL	BDL	BDL	BDL	0.311	BDL	BDL	BDL	BDL	KWR
					31.8.2019	419	7.7	....	12720	2.8	40	8260	0.015	0.038	BDL	BDL	BDL	BDL	0.321	BDL	BDL	BDL	BDL	KWR
					1.9.2019	538	7.7	....	13218	2.4	60	8600	0.032	0.043	BDL	BDL	BDL	BDL	0.298	BDL	BDL	BDL	BDL	KWR
					3.9.2019	547	7.7	....	15341	2.9	70	9980	0.029	0.056	BDL	BDL	BDL	BDL	0.479	BDL	BDL	BDL	BDL	KWR
					5.9.2019	601	6.9	....	14512	3.4	60	9440	0.023	0.072	BDL	BDL	BDL	BDL	0.433	BDL	BDL	BDL	BDL	KWR
					7.9.2019	610	6.9	....	16548	3.2	50	10760	0.020	0.052	BDL	BDL	BDL	BDL	0.122	BDL	BDL	BDL	BDL	KWR
					9.9.2019	701	7.4	....	13342	2.6	60	8680	0.027	0.043	BDL	BDL	BDL	BDL	0.128	BDL	BDL	BDL	BDL	KWR
					11.9.2019	710	7.6	....	14892	2.1	50	9680	0.023	0.028	BDL	BDL	BDL	BDL	0.108	BDL	BDL	BDL	BDL	KWR
					13.9.2019	789	7.9	....	15826	2.4	60	10280	0.016	0.038	BDL	BDL	BDL	BDL	0.361	BDL	BDL	BDL	BDL	KWR

Note: BDL= Below Detectable Limit

Analysed by: Lalita. B. Dodwad, S.A.

Dinesh.V.Naik. S.A.

P.T.O

Annexure-10

ABSTRACT OF MRPL Treated Trade Effluent (Final TTE (APMC yard)) FROM APRIL 2018-MARCH 2019

Sl No.	Parameters Analysed	Unit	Standard	Results											
				18-Apr	18-May	18-Jun	18-Jul	18-Aug	18-Sep	18-Oct	18-Nov	18-Dec	19-Jan	19-Feb	19-Mar
1	pH	pH unit	6-8.5	6.8	6.8	6.9	6.8	6.7	6.8	7	6.9	7.1	6.8	6.9	6.9
2	SS	mg/L	20	8	12	18	14	14	12	12	16	12	20	**28**	18
3	Oil & Grease	mg/L	5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
4	BOD (3 days @ 27 ^{0} C)	mg/L	15	11	7	8	4	3	3	6	14	4	4	**24**	**7**
5	Sulphide	mg/L	0.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
6	COD	mg/L	125	114	50	77	38	87	82	50	100	126	75	113	76
7	Ammoniacal Nitrogen	mg/L	15	BDL	BDL	0.56	0.56	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
8	TKN	mg/L	40	BDL	BDL	0.84	0.84	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
9	Free Ammonia	mg/L	5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
10	Flouride	mg/L	15	0.073	0.082	0.058	0.04	0.018	0.018	0.032	0.042	0.024	0.058	0.026	0.034
11	Dissolved Phosphate	mg/L	3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
12	TRC	mg/L	1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
13	Nitrate	mg/L	20	1.08	1.88	1.55	13.2	1.33	0.0998	1.32	1.4	1.18	1.18	1.22	1.22
14	Iron	mg/L	3	0.289	0.102	0.189	0.023	0.182	BDL	0.091	BDL	0.563	0.89	0.456	0.347
15	Copper	mg/l	1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.019	BDL	BDL	BDL	0.002
16	Lead	mg/l	0.1	BDL	BDL	BDL	BDL	0.041	0.02	0.004	BDL	BDL	BDL	BDL	BDL
17	Zinc	mg/l	5	0.042	BDL	0.124	0.11	BDL	0.001	0.013	0.082	0.028	0.819	BDL	0.145
18	Nickel	mg/l	1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.031	BDL	0.273	0.043	0.058
19	Total Chromium	mg/l	2	BDL	BDL	BDL	0.014	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
20	Cadmium	mg/l	2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.005

Annexure-10

ABSTRACT OF MRPL Treated Trade Effluent (Final TTE (APMC yard)) FROM APRIL 2017-MARCH 2018

Parameters Analysed	Unit	Standard	Results											
			17-Apr	17-May	17-Jun	17-Jul	17-Aug	17-Sep	17-Oct	17-Nov	17-Dec	18-Jan	18-Feb	18-Mar
pH	pH unit	6-8.5	7.6	7	7	7	6.8	6.8	7.5	7.3	7	6.9	6.8	7
SS	mg/L	20	20	18	14	18	18	20	12	10	18	8	12	12
Oil & Grease	mg/L	5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
BOD (3 days @ 27 ^{0} C)	mg/L	15	3	3	2	5	6	5	5	2	4	9	5	3
Sulphide	mg/L	0.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
COD	mg/L	125	91	81	65	65	91	120	85	57	87	113	71	93
Ammoniacal Nitrogen	mg/L	15	0.84	0.56	BDL	0.28	0.84	0.56	0.28	BDL	0.28	0.28	BDL	BDL
TKN	mg/L	40	1.12	0.84	BDL	0.56	1.12	0.84	0.56	BDL	0.56	0.56	BDL	BDL
Free Ammonia	mg/L	5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Flouride	mg/L	15	0.1	0.08	0.09	0.96	0.08	1.1	0.41	0.092	0.012	0.068	0.022	0.03
Dissolved Phosphate	mg/L	3	BDL	0.21	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
TRC	mg/L	1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Nitrate	mg/L	20	6.2	1.27	1.37	2.1	1.47	2.7	3.9	0.99	1.45	1.99	1.33	1.01
Iron	mg/L	3	0.912	0.704	0.128	1.12	0.42	0.46	0.44	0.163	BDL	0.159	0.096	0.068
Copper	mg/l	1	BDL	BDL	BDL	BDL	0.03	0.04	0.01	BDL	0.022	BDL	0.001	0.004
Lead	mg/l	0.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Zinc	mg/l	5	0.024	BDL	BDL	BDL	0.02	0.054	0.038	0.002	0.087	BDL	BDL	BDL
Nickel	mg/l	1	0.014	BDL	0.015	BDL	0.02	BDL	BDL	BDL	BDL	0.034	BDL	BDL
Total Chromium	mg/l	2	BDL	BDL	0.435	BDL	BDL	BDL	BDL	0.06	0.027	BDL	BDL	BDL
Cadmium	mg/l	2	BDL	BDL	BDL	BDL	0.004	BDL	BDL	BDL	BDL	BDL	BDL	BDL

Annexure-10 ABSTRACT OF MRPL Treated Trade Effluent (Final TTE (APMC yard)) FROM APRIL 2019-MARCH 2020

Sl No.	Parameters Analysed	Unit	Standard	Results						
				19-Apr	19-May	19-Jun	19-Jul	19-Aug	19-Sep	19-Oct
1	pH	pH unit	6-8.5	7.3	7	6.8	6.9	6.8	6.9	7
2	SS	mg/L	20	16	16	20	18	18	18	18
3	Oil & Grease	mg/L	5	BDL	BDL	BDL	BDL	BDL	BDL	BDL
4	BOD (3 days @ 27 ^{0} C)	mg/L	15	2	11	7	10	2	6	6
5	Sulphide	mg/L	0.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL
6	COD	mg/L	125	31	121	90	81	40	48	96
7	Ammoniacal Nitrogen	mg/L	15	BDL	BDL	BDL	BDL	BDL	BDL	BDL
8	TKN	mg/L	40	BDL	BDL	BDL	BDL	BDL	BDL	BDL
9	Free Ammonia	mg/L	5	BDL	BDL	BDL	BDL	BDL	BDL	BDL
10	Flouride	mg/L	15	0.085	0.135	0.23	0.098	0.28	0.322	0.109
11	Dissolved Phosphate	mg/L	3	BDL	BDL	BDL	BDL	BDL	BDL	BDL
12	TRC	mg/L	1	BDL	BDL	BDL	BDL	BDL	BDL	BDL
13	Nitrate	mg/L	20	6.2	1.39	2.42	1.32	1.99	1.99	12.6
14	Iron	mg/L	3	0.3	0.264	0.26	0.536	BDL	0.986	0.6
15	Copper	mg/l	1	0.002	0.119	BDL	BDL	BDL	BDL	0.007
16	Lead	mg/l	0.1	BDL	BDL	BDL	BDL	BDL	BDL	0.053
17	Zinc	mg/l	5	0.15	0.748	0.029	0.035	0.04	0.07	0.061
18	Nickel	mg/l	1	BDL	0.055	0.053	0.142	BDL	0.099	0.724
19	Total Chromium	mg/l	2	BDL	BDL	BDL	0.159	BDL	0.071	0.03
20	Cadmium	mg/l	2	BDL	BDL	BDL	BDL	0.025	BDL	0.011

Annexure-10

ABSTRACT OF MRPL Treated Trade Effluent (TTE phase III) FROM APRIL 2018-MARCH 2019

Sl No.	Parameters Analysed	Unit	Standard	Results											
				18-Apr	18-May	18-Jun	18-Jul	18-Aug	18-Sep	18-Oct	18-Nov	18-Dec	19-Jan	19-Feb	19-Mar
1	pH	pH unit	6-8.5	6.7	6.9	6.8	6.8	6.7	7.5	7.5	7.2	7	6.9	6.9	6.9
2	SS	mg/L	20	12	18	12	8	18	14	14	12	22	18	**34**	**50**
3	Oil & Grease	mg/L	5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
4	BOD (3 days @ 27 ^{0} C)	mg/L	15	9	9	7	3	4	5	12	10	3	**22**	**40**	11
5	Sulphide	mg/L	0.5	BDL	BDL	BDL	BDL	0	BDL	BDL	BDL	BDL	BDL	BDL	BDL
6	COD	mg/L	125	92	78	83	46	74	96	85	85	42	**185**	**210**	98
7	Ammoniacal Nitrogen	mg/L	15	BDL	0.28	0.28	0.28	0.28	0.28	BDL	BDL	BDL	BDL	BDL	BDL
8	TKN	mg/L	40	BDL	0.56	0.56	0.56	0.56	0.56	BDL	BDL	BDL	BDL	BDL	BDL
9	Free Ammonia	mg/L	5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
10	Flouride	mg/L	15	0.044	0.052	0.033	0.028	0.052	0.023	0.038	0.048	0.02	0.062	0.028	0.036
11	Dissolved Phosphate	mg/L	3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
12	TRC	mg/L	1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
13	Nitrate	mg/L	20	1.12	1.13	0.099	9.83	1.22	1.13	1.38	1.32	1.14	1.24	1.18	1.26
14	Iron	mg/L	3	0.155	0.021	0.122	0.013	1.199	BDL	0.348	BDL	0.273	1.221	0.648	0.524
15	Copper	mg/l	1	BDL	BDL	0.023	BDL	0.003	BDL	BDL	0.012	BDL	BDL	BDL	0.004
16	Lead	mg/l	0.1	BDL	BDL	BDL	BDL	0.064	BDL	BDL	BDL	BDL	BDL	BDL	BDL
17	Zinc	mg/l	5	0.039	BDL	4.89	0.006	BDL	0.053	0.014	BDL	0.052	0.362	0.111	0.296
18	Nickel	mg/l	1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.359	0.009	BDL
19	Total Chromium	mg/l	2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
20	Cadmium	mg/l	2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.008	0.003

Annexure-10

ABSTRACT OF MRPL Treated Trade Effluent (TTE phase III) FROM APRIL 2017-MARCH 2018

Parameters Analysed	Unit	Standard	Results											
			17-Apr	17-May	17-Jun	17-Jul	17-Aug	17-Sep	17-Oct	17-Nov	17-Dec	18-Jan	18-Feb	18-Mar
pH	pH unit	6-8.5	7.1	7.1	6.8	6.7	6.9	7	7.3	7.2	7.1	7	7	6.9
SS	mg/L	20	16	18	16	12	18	12	16	14	14	10	18	18
Oil & Grease	mg/L	5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
BOD (3 days @ 27 ^{0} C)	mg/L	15	2	3	5	4	5	3	3	5	3	7	9	8
Sulphide	mg/L	0.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
COD	mg/L	125	58	78	108	96	93	80	59	95	58	69	85	119
Ammoniacal Nitrogen	mg/L	15	BDL	0.56	0.84	0.56	0.56	BDL	BDL	0.28	BDL	BDL	0.28	0.28
TKN	mg/L	40	BDL	0.84	1.12	0.84	0.84	BDL	BDL	0.56	BDL	BDL	0.56	0.56
Free Ammonia	mg/L	5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Flouride	mg/L	15	0.08	0.21	0.22	0.24	0.23	0.26	0.38	0.44	0.042	0.042	0.018	0.038
Dissolved Phosphate	mg/L	3	BDL	0.967	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
TRC	mg/L	1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Nitrate	mg/L	20	5.8	1.38	1.44	1.62	1.45	2.1	2.9	1.22	1.02	1.02	1.22	1.32
Iron	mg/L	3	0.606	0.647	1.142	0.71	0.47	0.26	0.28	0.449	0.062	0.185	0.05	0.125
Copper	mg/l	1	BDL	BDL	BDL	BDL	BDL	0.015	0.018	0.025	BDL	BDL	0.002	0.011
Lead	mg/l	0.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.093	BDL	BDL	BDL	BDL
Zinc	mg/l	5	0.009	BDL	BDL	BDL	0.02	0.045	0.031	0.114	0.032	BDL	0.249	0.003
Nickel	mg/l	1	0.004	BDL	BDL	BDL	0.04	0.001	BDL	0.093	BDL	0.032	BDL	0.019
Total Chromium	mg/l	2	BDL	BDL	0.374	BDL	BDL	BDL	BDL	0.014	BDL	BDL	BDL	BDL
Cadmium	mg/l	2	BDL	BDL	BDL	BDL	0.003	BDL	BDL	BDL	BDL	BDL	BDL	BDL

Annexure-10

ABSTRACT OF MRPL Treated Trade Effluent (TTE phase III) FROM APRIL 2019-MARCH 2020

Sl No.	Parameters Analysed	Unit	Standard	Results						
				19-Apr	19-May	19-Jun	19-Jul	19-Aug	19-Sep	19-Oct
1	pH	pH unit	6-8.5	6.8	6.9	6.9	6.8	6.9	6.9	7
2	SS	mg/L	20	14	18	18	18	18	20	12
3	Oil & Grease	mg/L	5	BDL	BDL	BDL	BDL	BDL	BDL	BDL
4	BOD (3 days @ 27 ^{0} C)	mg/L	15	4	13	14	8	3	5	2
5	Sulphide	mg/L	0.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL
6	COD	mg/L	125	49	100	111	80	41	83	56
7	Ammoniacal Nitrogen	mg/L	15	BDL	BDL	BDL	BDL	BDL	BDL	BDL
8	TKN	mg/L	40	BDL	BDL	BDL	BDL	BDL	BDL	BDL
9	Free Ammonia	mg/L	5	BDL	BDL	BDL	BDL	BDL	BDL	BDL
10	Flouride	mg/L	15	0.071	0.098	0.25	0.23	0.38	0.201	0.103
11	Dissolved Phosphate	mg/L	3	BDL	BDL	BDL	BDL	BDL	BDL	BDL
12	TRC	mg/L	1	BDL	BDL	BDL	BDL	BDL	BDL	BDL
13	Nitrate	mg/L	20	3.3	2.32	2.82	1.88	2.02	1.96	8.53
14	Iron	mg/L	3	0.5	0.228	0.217	1.16	0.283	1.026	0.956
15	Copper	mg/l	1	0.006	0.109	BDL	BDL	BDL	BDL	0.016
16	Lead	mg/l	0.1	BDL	BDL	BDL	BDL	BDL	BDL	0.078
17	Zinc	mg/l	5	0.25	0.04	0.084	0.15	0.06	0.06	0.185
18	Nickel	mg/l	1	BDL	0.018	0.018	0.522	BDL	0.16	0.117
19	Total Chromium	mg/l	2	BDL	BDL	BDL	0.23	BDL	BDL	0.004
20	Cadmium	mg/l	2	BDL	BDL	BDL	BDL	0.026	BDL	0.011

ABSTRACT of Analysis report of Treated trade Effluent (discahrged to Sea) collected from M/s BASF FROM APRIL-2017 TO MARCH- 2018

Sl No.	Parameters Analysed	Unit	Standard	RESULT											
				Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18
1	pH	pH unit	6-8.5	7.3	8.2	7.8	6.7	6.9	6.8	6.6	6.9	7.1	6.9	6.8	6.9
2	Suspended Solids	mg/L	100	26	36	30	20	18	12	24	18	12	16	18	34
3	BOD (3 days @ 27 ^{0} C)	mg/L	100	3	6	5	4	3	2	3	2	2	2	2	3
4	Oil &Grease	mg/L	10	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
5	Copper	mg/l	3.0	0.008	1.028	0.986	0.03	0.12	0.84	0.98	1.63	BDL	0.01	0.047	0.07
6	Lead	mg/l	0.1	BDL	BDL	BDL	0.02	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
7	Zinc	mg/l	5.0	0.358	2.181	1.73	0.08	0.82	0.31	0.83	4.65	0.018	0.075	0.278	0.113
8	Nickel	mg/l	3.0	BDL	0.02	BDL	BDL	0.02	BDL	BDL	BDL	BDL	0.026	BDL	BDL
9	Total Chromium	mg/l	2.0	BDL	BDL	BDL	0.04	BDL	0.09	0.1	0.2	BDL	BDL	0.044	BDL
10	Cadmium	mg/l	2.0	BDL	BDL	BDL	BDL	BDL	BDL	0.08	BDL	BDL	BDL	BDL	BDL

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Annexure-10

ABSTRACT OF ANALYSIS OF TREATED EFFLUENT(DISCHARGED) OF M/S BASF FROM APRIL-2017 TO MARCH- 2018

Sl No.	Parameters Analysed	Unit	Standard	RESULT											
				Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18
1	pH	pH unit	6-8.5	7.3	8.2	7.8	6.7	6.9	6.8	6.6	6.9	7.1	6.9	6.8	6.9
2	Suspended Solids	mg/L	100	26	36	30	20	18	12	24	18	12	16	18	34
3	BOD (3 days @ 27 ^{0} C)	mg/L	100	3	6	5	4	3	2	3	2	2	2	2	3
4	Oil &Grease	mg/L	10	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
5	Copper	mg/l	3.0	0.008	1.028	0.986	0.03	0.12	0.84	0.98	1.63	BDL	0.01	0.047	0.07
6	Lead	mg/l	0.1	BDL	BDL	BDL	0.02	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
7	Zinc	mg/l	5.0	0.358	2.181	1.73	0.08	0.82	0.31	0.83	4.65	0.018	0.075	0.278	0.113
8	Nickel	mg/l	3.0	BDL	0.02	BDL	BDL	0.02	BDL	BDL	BDL	BDL	0.026	BDL	BDL
9	Total Chromium	mg/l	2.0	BDL	BDL	BDL	0.04	BDL	0.09	0.1	0.2	BDL	BDL	0.044	BDL
10	Cadmium	mg/l	2.0	BDL	BDL	BDL	BDL	BDL	BDL	0.08	BDL	BDL	BDL	BDL	BDL

Annexure-10

ABSTRACT of Analysis report of treated trade effluent (discharged to sea) collected M/s BASF Treated Trade Effluent FROM APRIL-2019 TO MARCH- 2020

Sl No.	Parameters Analysed	Unit	Standard	RESULT						
				Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19
1	pH	pH unit	6-8.5	7.3	7.2	6.9	6.8	7	7	7.3
2	Suspended Solids	mg/L	100	16	18	22	16	42	18	16
3	BOD (3 days @ 27 ^{0} C)	mg/L	100	3	3	3	3	8	4	2
4	Oil &Grease	mg/L	10	BDL	BDL	BDL	BDL	BDL	BDL	BDL
5	Copper	mg/l	3.0	0.029	0.108	0.036	BDL	1.498	0.06	0.381
6	Lead	mg/l	0.1	BDL	BDL	BDL	BDL	BDL	BDL	0.016
7	Zinc	mg/l	5.0	0.296	0.461	0.101	0.214	3.143	0.278	0.531
8	Nickel	mg/l	3.0	0.053	0.007	BDL	BDL	BDL	0.005	1.027
9	Total Chromium	mg/l	2.0	0.028	BDL	BDL	BDL	1.6	BDL	0.08
10	Cadmium	mg/l	2.0	0.006	BDL	BDL	0.017	0.028	BDL	0.011

Annexure 10

Fish Meal Industries Discharging Treated Trade Effluent to Arabian Sea

Sl No.	Parameters Analysed	Unit	Standard	Date of collecteion & Results			
				Mukka oil & Sea Foods Sasihithulu Road, Mukka, Mangaluru	Bawa Fisheries Sasihithulu Road, Mukka, Mangaluru	Bawa Fish Meal & Oil Co. Sasihithulu Road, Mukka, Mangaluru	
				17.12.16	17.12.16	21.12.16	17.12.16
1	pH	pH unit	5.5-9.0	6.4	6.8	8	7.8
2	Suspended Solids	mg/L	100	**4990**	**1610**	**3540**	**900**
3	BOD (3 days @ 27 ^{0} C)	mg/L	100	**15000**	**2400**	**3900**	**1650**
4	COD	mg/L	250	**24159**	**4161**	**10622**	**3004**
5	Oil and Grease	mg/L	20	**78**	**52**	**76**	**42**
6	Sulphide	mg/L	5	**12**	**10.4**	**12**	**8.8**
7	Ammoniacal Nitrogen	mg/L	50	3.92	2.8	14.56	2.24
8	TRC	mg/L	1	BDL	BDL	BDL	BDL

Annexure-10

Compiled analysis results of ETP of M/s Udupi Power Corporation Ltd, from 01/01/2018 to 30/10/2019							
Date of Sampling	ETP						
	p^H	SS	Oil & Grease	BOD	COD	Lead	Chromium
Standrads	**5.5-9**	**100**	**20**	**100**	**250**	**2**	**2**
19.01.2018	7	12	BDL	4	98	BDL	0.041
27.02.2018	7.1	24	BDL	3	52	BDL	BDL
22.03.2018	7	32	BDL	3	82	BDL	BDL
28.04.2018	7	26	BDL	3	72	BDL	BDL
28.05.2018	7	28	BDL	5	41	BDL	BDL
12.06.2018	6.9	22	BDL	2	36	BDL	BDL
09.07.2018	6.8	18	BDL	3	74	0.023	BDL
18.07.2018	7	12	BDL	2	54	0.009	BDL
26.09.2018	6.8	30	BDL	2	61	BDL	0.065
15.10.2018	6.5	16	BDL	2	40	0.009	0.594
21.11.2018	6.7	14	BDL	2	37	BDL	BDL
14.12.2018	7	28	BDL	3	55	BDL	BDL
10.01.2019	6.3	18	BDL	4	41	BDL	BDL
13.02.2019	6.9	24	BDL	37	190	BDL	BDL
01.03.2019	6.8	18	BDL	28	192	BDL	BDL
29.04.2019	6.9	18	BDL	3	40	BDL	BDL
30.05.2019	7	22	BDL	8	120	BDL	BDL
04.06.2019	7	18	BDL	5	100	BDL	BDL
13.06.2019	6.9	20	BDL	3	40	BDL	BDL
08.07.2019	6.7	20	BDL	4	6.5	BDL	BDL
20.07.2019	6.7	18	BDL	4	73	0.203	0.356
02.08.2019	6.9	18	BDL	5	56	BDL	BDL
03.09.2019	7	18	BDL	2	33	BDL	BDL
18.10.2019	6.8	18	BDL	3	45	BDL	BDL

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Environmental Officer

KSPCB, Udupi

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ANNEXURE -10

Compiled analysis results of Gurad Pond water of M/s Udupi Power Corporation Limited from 01/01/2018 to 30/11/2019															
Date of Sampling	Gurad Pond Water (Parameters Analysed)														
	P^H	SS (mg/L)	Oil & Grease (mg/L)	BOD (mg/L)	Flouride (mg/L)	Nitrate (mg/L)	Sulphide (mg/L)	Iron (mg/L)	TRC (mg/L)	Copper (mg/L)	Lead (mg/L)	Zinc (mg/L)	Nickel (mg/L)	Total Chromium (mg/L)	Cadmium (mg/L)
Standards	5.5-/9	100	20	100	15	20	5	3	1	3	2	15	5	2	2
19/01/2018	7	8	BDL	2	0.02	1.4	BDL	0.142	BDL	BDL	BDL	0.009	BDL	BDL	BDL
27/02/2018	7	12	BDL	2	0.022	1.32	BDL	0.009	BDL	BDL	BDL	BDL	BDL	BDL	BDL
22/03/2018	7	20	BDL	2	0.025	1.12	BDL	BDL	BDL	BDL	BDL	0.011	BDL	BDL	BDL
28/04/2018	7.3	26	BDL	5	0.033	1.13	BDL	2.409	BDL	BDL	BDL	0.01	BDL	BDL	BDL
28/05/2018	7	22	BDL	2	0.022	1.12	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
12/6/2018	7	20	BDL	2	0.05	1.02	BDL	BDL	BDL	BDL	BDL	0.021	BDL	BDL	BDL
18/07/2018	6.9	22	BDL	2	0.038	1.12	BDL	0.18	BDL	BDL	BDL	BDL	BDL	BDL	BDL
9/7/2018	7	24	BDL	2	0.012	0.0992	BDL	0.62	BDL	BDL	BDL	BDL	BDL	BDL	BDL
26/09/2018	7.2	10	BDL	2	0.015	1.12	BDL	BDL	BDL	BDL	BDL	0.005	BDL	BDL	BDL
15/10/2018	7	8	BDL	2	0.012	1.13	BDL	0.807	BDL	BDL	BDL	0.079	BDL	BDL	BDL
21/11/2018	7.1	6	BDL	2	0.018	1.18	BDL	BDL	BDL	0.003	BDL	BDL	BDL	BDL	BDL
14/12/2018	7.2	10	BDL	4	0.022	1.16	BDL	0.081	BDL	BDL	BDL	0.026	BDL	BDL	BDL
10/1/2019	7.2	14	BDL	4	0.054	1.2	BDL	1.758	BDL	BDL	BDL	0.146	BDL	BDL	BDL
13/02/2019	6.8	26	BDL	42	0.04	1.28	BDL	0.68	BDL	0.004	BDL	BDL	BDL	BDL	BDL
1/3/2019	6.7	20	BDL	54	0.034	1.22	BDL	0.018	BDL	BDL	BDL	BDL	BDL	BDL	0.005

29/04/2019	7.3	20	BDL	44	2.6	9.8	BDL	0.626	BDL	0.003	0.097	BDL	0.21	0.574	0.035
30/05/219	7.2	20	BDL	3	0.99	2.5	BDL	1.686	BDL	0.21	1.19	0.44	0.751	BDL	0.129
4/6/2019	7	18	BDL	19	0.52	3.2	BDL	1.564	BDL	0.102	BDL	0.057	0.098	BDL	BDL
13/06/2019	6.8	18	BDL	8	0.103	1.99	BDL	2.508	BDL	BDL	BDL	0.051	0.113	BDL	BDL
8/7/2019	6.9	18	BDL	6	0.299	2.36	BDL	0.098	BDL	0.125	BDL	0.25	0.156	BDL	0.066
20/07/2019	7.2	20	BDL	12	0.35	2.65	BDL	2.254	BDL	BDL	BDL	0.023	0.173	0.892	0.5
2/8/2019	6.9	26	BDL	10	0.58	2.88	BDL	BDL	BDL	BDL	0.035	0.552	BDL	BDL	0.026
18/10/2019	6.9	18	BDL	3	0.3	1.22	BDL	BDL	BDL	BDL	BDL	0.042	0.098	BDL	0.21

Sd/-
Environmental Officer
KSPCB Udupi

ANNEXURE-10

Abstract of analysis report of treated effluent discharged to Sea

Grasim Industries Limited Chemical Division, Binaga, Karwar, Uttarakannada District							
Analysis Report of Treated effluent discharge to Sea(General Sump)							
Year		2018-19				2019-20	
Parameters	Standards	Oct'18	Jul'18	Mar'18	17-Sep	July'19	Apr'19
pH	5.5-9	6.4	6.5	8.2	6.5	6.8	6.2
BOD	100	25.8	32	64.5	53.4	24	21
COD	250	131	141	162	176	121	98.1
Suspended Solids	100	60	70	70	60	60	70
Oil & Grease	20	BDL	BDL	BDL	BDL	BDL	BDL
Total Residual Chlorine	1	BDL	BDL	BDL	BDL	BDL	BDL
Total kjeldhal Nitrogen	100	9.6	7.8	6.2	7.56	7.6	6.8
Ammonical Nitrogen	50	5.8	5.1	4.6	4.23	4.3	3.6
Free Ammonia	5	0.003	0.009	0.002	0.007	0.024	0.002
Lead Pb	2	BDL	BDL	BDL	BDL	BDL	BDL
Copper,Cu	3	BDL	BDL	BDL	BDL	BDL	BDL
Zinc,Zn	15	BDL	BDL	BDL	BDL	BDL	BDL
Flouride,F	15	1.4	1	0.6	0.6	1.4	1.2
Sulphide, S	5	BDL	BDL	BDL	BDL	BDL	BDL
Mercury,Hg	0.01	BDL	BDL	BDL	BDL	BDL	BDL
Nitrate, N	20	1.3	1.2	1.2	1.64	1.8	4.3
Phosphate,PO4-P	-	-	-	0.078	-	0.046	0.068

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ANNEXURE-10		
Consolidated report based on analysis report		
M/s. Anfal Marine Products, Mudga, Karwar		
Analysis Report of Final Treated effluent discharge to Sea		
Year		**2018-19**
Parameters	**Standards**	**12/18/2018**
pH	**5.5-9**	8.1
BOD	**100**	83
COD	**250**	216.7
NO3	**20**	3.1
Ammonical Nitrogen	**50**	39.2
Total kjeldhal Nitrogen	**100**	78.6
Sulphide, S	**5**	BDL
Oil & Grease	**10**	BDL

M/s. Anfal Marine Products, Mudga, Karwar

Analysis Report of Sea Water collected at discharging point		
Year		**2018-19**
Parameters	**Standards**	**12/18/2018**
pH	**5.5-9**	7.8
BOD	**100**	12.6
COD	**250**	55.1

Annexure-10

Compiled analysis results of ETP of M/s Janatha Fish Meal & Oil Co, from 01/08/2018 to 30/10/2019										
Date of Sampling	ETP									
	p^H	SS	Oil & Grease	BOD	COD	TRC	Ammonical Netrogen	TKN	Free Ammonia	Sulphide
Standards	**5.5-9**	**100**	**20**	**100**	**250**	**1**	**50**	**100**	**5**	**5**
25.08.2018	7	28	BDL	24	56	BDL	BDL	BDL	BDL	BDL
26.09.2018	6.9	24	BDL	12	86	BDL	BDL	BDL	BDL	BDL
15.10.2018	7	32	BDL	7	71	BDL	BDL	BDL	BDL	BDL
21.11.2018	6.9	10	BDL	5	36	BDL	BDL	BDL	BDL	BDL
14.12.2018	7.1	28	BDL	9	69	BDL	BDL	BDL	BDL	BDL
10.01.2019	6.8	26	BDL	4	55	BDL	BDL	BDL	BDL	BDL
13.02.2019	6.8	24	BDL	10	52	BDL	BDL	BDL	BDL	BDL
01.03.2019	6.7	12	BDL	14	48	BDL	BDL	BDL	BDL	BDL
29.04.2019	7.2	22	BDL	16	98	BDL	BDL	BDL	BDL	BDL
30.05.2019	7	20	BDL	14	56	BDL	BDL	BDL	BDL	BDL
13.06.2019	_	_	_	_	_	_	_	_	_	_
03.09.2019	7	20	BDL	2	33	BDL	BDL	BDL	BDL	BDL
18.10.2019	7	18	BDL	4	41	BDL	BDL	BDL	BDL	BDL

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KSPCB, Udupi

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Annexure-10

Compiled analysis results of ETP of M/s Yashawi Fish Meal & Oil Co, from 01/04/2018 to 30/10/2019										
Date of Sampling	ETP									
	p^H	SS	BOD	COD	TRC	Sulphide	Oil & Grease	Ammonical Netrogen	TKN	Free Ammonia
Standards	**5.5-9**	**100**	**100**	**250**	**1**	**5**	**20**	**50**	**100**	**5**
28.04.2018	6.7	72	36	216	BDL	BDL	BDL	0.28	0.56	BDL
28.05.2018	6.8	60	39	173	BDL	BDL	BDL	0.28	0.56	BDL
25.08.2018	6.8	88	44	164	BDL	BDL	BDL	0.28	0.56	BDL
26.09.2018	7.1	270	21	529	BDL	BDL	BDL	0.56	0.84	BDL
15.10.2018	6.9	134	**1620**	**3396**	BDL	BDL	BDL	11	14	BDL
21.11.2018	6.8	56	10	50	BDL	BDL	BDL	0.2	0.44	BDL
14.12.2018	6.8	38	34	192	BDL	BDL	BDL	0.336	0.056	BDL
10.01.2019	6.5	26	4	76	BDL	BDL	BDL	0.448	0.1008	BDL
13.02.2019	7.1	28	28	167	BDL	BDL	BDL	36	43	0.0362
01.03.2019	6.8	18	59	220	BDL	BDL	BDL	21	26	0.215
29.04.2019	7.1	22	45	113	BDL	4	BDL	8	11	0.00085
30.05.2019	7	20	75	238	BDL	BDL	BDL	8	12	0.00078
13.06.2019	6.8	22	57	121	BDL	BDL	BDL	5	8	0.00509
18.10.2019	6.9	32	14	81	BDL	BDL	BDL	3	6	0.0003

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KSPCB, Udupi

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Annexure-10

Compiled analysis results of ETP of M/s Goan Fresh Marine, from 01/01/2018 to 30/10/2019							
Date of Sampling	**P^H**	**SS**	**BOD**	**Oil & Grease**	**Sulphate**	**Conductivity**	**TDS**
Standards	**5.5-9**	**200**	**100**	**10**	**1000**	**2250**	**2100**
19.01.2018	6.8	122	20	BDL	23	1907	1102
27.02.2018	6.9	34	18	BDL	12	1992	1106
22.03.2018	6.8	92	14	BDL	21	1182	628
25.08.2018	7	82	42	BDL	5	2013	1007
26.09.2018	7.2	116	16	BDL	33	6738	3272
15.10.2018	7	48	6	BDL	8	2042	1518
21.11.2018	6.8	62	20	BDL	32	2132	1138
14.12.2018	6.8	12	11	BDL	5	748	388
10.01.2019	7.2	22	2	BDL	2	510	270
13.02.2019	7.1	20	2	BDL	3	868	402
01.03.2019	6.8	16	2	BDL	14	972	452
29.04.2019	7.3	20	7	BDL	4	1052	308
30.05.2019	7	18	3	BDL	3	1128	658
13.06.2019	6.9	20	8	BDL	10	1584	510
03.09.2019	7	26	2	BDL	10	687	336

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Environmental Officer
KSPCB, Udupi

Annexure-10

Compiled analysis results of ETP of M/s Hindusthan Marine, from 01/04/2018 to 30/10/2019														
Date of Sampling	ETP													
	P^H	SS	Oil & Grease	BOD	Chloride	Sulphate	Phosphate	Iron	COD	Nitrate	Ammonical Nitaogen	TKN	Free Ammonia	TRC
Standards	**5.5-9.0**	**100**	**10**	**30**	**350**	**1000**	**5**	**3**	**250**	**10**	**50**	**100**	**5**	**1**
28.04.2018	6.8	66	BDL	18	330	15	BDL	0.793	_	_	_	_	_	_
28.05.2018	6.8	74	BDL	26	324	40	BDL	0.572	_	_	_	_	_	_
25.08.2018	7	40	BDL	37	160	6	BDL	0.42	_	_	_	_	_	_
26.09.2018	6.9	72	BDL	15	**1230**	37	BDL	0.051	_	_	_	_	_	_
15.10.2018	7	74	BDL	45	900	4	BDL	0.182	_	_	_	_	_	_
21.11.2018	6.9	20	BDL	22	160	6	BDL	0.264	_	_	_	_	_	_
14.12.2018	6.8	12	BDL	16	196	20	BDL	0.126	_	_	_	_	_	_
10.01.2019	7.2	24	BDL	54	154	33	BDL	BDL	_	_	_	_	_	_
13.02.2019	7.2	24	BDL	75	92	1	BDL	1.869	_	_	_	_	_	_
01.03.2019	6.9	18	BDL	4	300	15	BDL	0.539	_	_	_	_	_	_
29.04.2019	7.3	22	BDL	25	_	_	_	_	229	9.8	BDL	BDL	BDL	BDL
30.05.2019	7.3	20	BDL	18	_	_	_	_	232	3.7	BDL	BDL	BDL	BDL
13.06.2019	6.9	22	BDL	48	_	_	_	_	121	5.4	BDL	BDL	BDL	BDL
18.10.2019	7	18	BDL	15	_	_	_	_	90	4.2	BDL	BDL	BDL	BDL

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Environmental Officer
KSPCB, Udupi

Annexure-10

Compiled analysis results of ETP of M/s Raj Fish Meal & Oil Co, from 01/04/2018 to 30/10/2019											
Date of Sampling	ETP										
	pH	SS (mg/L)	Oil & Grease (mg/L)	BOD	COD	TRC (mg/L)	Ammonical Netrogen	TKN	Free Ammonia	Sulphide	Nitrate
Standards	5.5-9	100	20	100	250	1	50	100	5	5	10
28.04.2018	7	20	BDL	21	91	BDL	BDL	BDL	BDL	BDL	_
28.05.2018	6.9	48	BDL	19	90	BDL	0.56	0.84	BDL	BDL	_
25.08.2018	6.7	32	BDL	28	75	BDL	0.56	0.84	BDL	BDL	_
26.09.2018	7.2	22	BDL	3	50	BDL	BDL	BDL	BDL	BDL	_
15.10.2018	6.8	40	BDL	5	59	BDL	BDL	BDL	BDL	BDL	_
21.11.2018	6.8	8	BDL	5	40	BDL	BDL	BDL	BDL	BDL	_
14.12.2018	7	10	BDL	19	161	BDL	BDL	BDL	BDL	BDL	_
10.01.2019	7.1	24	BDL	4	50	BDL	BDL	BDL	BDL	BDL	_
13.02.2019	7.1	26	BDL	12	55	BDL	BDL	BDL	BDL	BDL	_
01.03.2019	6.7	16	BDL	41	200	BDL	BDL	BDL	BDL	BDL	_
29.04.2019	7.2	20	BDL	24	80	BDL	BDL	BDL	BDL	BDL	4.6
30.05.2019	7.1	18	BDL	3	36	BDL	BDL	BDL	BDL	BDL	2.7
13.06.2019	6.9	20	BDL	3	40	BDL	BDL	BDL	BDL	BDL	3.5
03.09.2019	6.9	16	BDL	2	35	BDL	BDL	BDL	BDL	BDL	7.5
18.10.2019	6.9	20	BDL	3	40	BDL	BDL	BDL	BDL	BDL	3.8

Sd/-
Environmental Officer
KSPCB, Udupi

ANNEXURE-8

MAHARASHATRA POLLUTION CONTROL BOARD

Phone : 2402 0781/2401 0437
Fax : 2402 4068
Email : jdwater@mpcb.gov.in
Visit At : http://mpcb.gov.in

Kapataru Point,
02^{nd},03^{rd} & 04^{th} floor
Opp. Cineplanet Cinema,
Near Sion Circle, Sion (E),
Mumbai- 400 022.

No. MPCB/JD (WPC)/B: 5148

Date: 16 /12 /2019.

141586
20 DEC 2019
Central Pollution Control Board
Parivesh Bhawan, East Arjun Nagar, Delhi-110032

NGT Matter.

To,
The Divisional Head WQM-I,
Central Pollution Control Board.
Parivesh Bhavan,East Arjun Nagar,Delhi 110032

Sub: Compliance w.r.t H'ble NGT Order in OA no 829/2019 in the matter of Lt.Col Sarvadaman Singh Oberoi Vs UOI& Ors

Ref: 1) Your letter F.No.A14011/1/2019-WQM-I 7274 Dated 01.10.2019
2) The Hon'ble NGT Principal Bench order dated 03.12.2019

Sir,

With reference to above cited subject matter, The Hon'ble NGT Principal Bench had passed an order on 03.12.2019 in aforesaid matter and directed that, the state may give the relevant information to the CPCB in this regard the progress on the action taken report is as under,

a) The MPCB has issued directions to all the local bodies including coastal areas to submit the time bound action plan for 100% treatment of the generated sewage and achieving effluent discharge standards for STPs.

b) Further direction issued to all local bodies, Why the Municipal Corporation shall not be levied by MPC Board the maximum amount of environmental compensation (Total capital cost component amount as well as O & M cost component recommended for untreated/partially treated sewage discharge as mentioned in the Hon'ble NGT order dated 28/08/2019 in Original Application no 593/2017 in Paryavaran Surksha Samiti & anr v/s Union of India.

c) All the District magistrate including coastal areas has been instructed to Prepare the District Environmental Plan (DEP), the work is in progress in this regard.

This is submitted for your information and further needful consideration.

Thanking You.

Yours faithfully

(E. Ravendiran,IAS)
Member Secretary

Pl see for n/a

Copy submitted to:
Hon'ble Chairman, MPCB, Mumbai – for favour of information.
Copy to: Joint Director (WPC)/Law Officer, MPCB, Mumbai – for information

MAHARASHTRA POLLUTION CONTROL BOARD

Tel: 24010437/24020781/24014701
Fax: 24023516/24024068/24044531
Website: www.mpcb.gov.in

Kalpataru Point, 2nd - 4th Floor
Opp. Cine Planet Cinema,
Near Sion Circle, Sion (E)
Mumbai- 400 022.

No.MPCB/B- 4715

Date : 25/11/2019

To

The District Collector,
Kolhapur.

Sub : Before the Hon'ble National Green Tribunal,
Principal Bench, New Delhi
Original Application No.829/2019 filed by
Lt.Col.Sarvadaman Singh Oberoi
v/s
Union of India & Ors.

Ref : Orders dtd.15/07/2019 and 17/09/2019 passed by
Hon'ble National Green Tribunal, New Delhi.

.....

Lt.Col.Sarvadaman Singh Oberoi has filed an Original Application bearing No.829/2019 against Union of India before the Hon'ble National Green Tribunal, Principal Bench, New Delhi, seeking directions to formulate an Action Plan to restore sea water quality alongwith Indian coastal areas.

In the said matter, the Hon'ble NGT vide its order dated 15/07/2019 directed that the District Enviornment Plan to be operated by a District Committee etc.

The Hon'ble NGT further vide order dated 17/09/2019 directed the District Magistrates to cover the subject of coastal and marine pollution in the District Environment Plans to be prepared with reference to the Order dated 15/07/2019 and furnish report to the Chief Secretary concerned.

Copies of the orders dated 15/07/2019 and 17/09/2019 are enclosed with a request to prepare the District Environment Plans for onward submission before the Hon'ble Chief Secretary, Government of Maharashtra.

With regards,

Yours faithfully,

(E. Ravendiran, IAS)
Member Secretary

Encl: As above.

Copy submitted to: Hon'ble Principal Secretary, Revenue and Forests Department, Govt. of Maharashtra, Mantralaya, Mumbai – for information.
Copy to: Joint Director (WPC)/Law Officer (P&L Dinv.I), MPCB, Mumbai – for information and necessary follow up.
Copy to: Regional Officer, MPCB, Kolhapur /Sub-Regional Officer, MPCB, Kolhapur - for information and necessary follow up action. They are requested serve the copy of the said letter to the concerned District Collectors.

MAHARASHTRA POLLUTION CONTROL BOARD

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Kalpataru Point, 2nd - 4th Floor
Opp. Cine Planet Cinema,
Near Sion Circle, Sion (E)
Mumbai- 400 022.

No.MPCB/B- 4715

Date : 25/11/2019

To

The District Collector,
Navi Mumbai.

Sub : Before the Hon'ble National Green Tribunal,
Principal Bench, New Delhi
Original Application No.829/2019 filed by
Lt.Col.Sarvadaman Singh Oberoi
v/s
Union of India & Ors.

Ref : Orders dtd.15/07/2019 and 17/09/2019 passed by
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Copies of the orders dated 15/07/2019 and 17/09/2019 are enclosed with a request to prepare the District Environment Plans for onward submission before the Hon'ble Chief Secretary, Government of Maharashtra.

With regards,

Yours faithfully,

(E. Raveendiran, IAS)
Member Secretary

Encl: As above.

Copy submitted to: Hon'ble Principal Secretary, Revenue and Forests Department, Govt. of Maharashtra, Mantralaya, Mumbai – for information.
Copy to: Joint Director (WPC)/Law Officer (P&L Dinv.I), MPCB, Mumbai – for information and necessary follow up.
Copy to: Regional Officer, MPCB, Navi Mumbai /Sub-Regional Officer, MPCB, Navi Mumbai - for information and necessary follow up action. They are requested serve the copy of the said letter to the concenred District Collectors

MAHARASHTRA POLLUTION CONTROL BOARD

el: 24010437/24020781/24014701
ax: 24023516/24024068/24044531
Website: www.mpcb.gov.in

Kalpataru Point, 2nd - 4th Floor
Opp. Cine Planet Cinema,
Near Sion Circle, Sion (E)
Mumbai- 400 022.

No.MPCB/B-4715

Date : 25/11/2019

To

The District Collector,
Raigad.

Sub : Before the Hon'ble National Green Tribunal,
Principal Bench, New Delhi
Original Application No.829/2019 filed by
Lt.Col.Sarvadaman Singh Oberoi
v/s
Union of India & Ors.

Ref : Orders dtd.15/07/2019 and 17/09/2019 passed by
Hon'ble National Green Tribunal, New Delhi.

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Copies of the orders dated 15/07/2019 and 17/09/2019 are enclosed with a request to prepare the District Environment Plans for onward submission before the Hon'ble Chief Secretary, Government of Maharashtra.

With regards,

Yours faithfully,

(E. Ravendiran, IAS)
Member Secretary

Encl: As above.

Copy submitted to: Hon'ble Principal Secretary, Revenue and Forests Department, Govt. of Maharashtra, Mantralaya, Mumbai – for information.
Copy to: Joint Director (WPC)/Law Officer (P&L Dinv.I), MPCB, Mumbai – for information and necessary follow up.
Copy to: Regional Officer, MPCB, Raigad /Sub-Regional Officer, MPCB, Raigad - for information and necessary follow up action. They are requested serve the copy of the said letter to the concenred District Collectors

MAHARASHTRA POLLUTION CONTROL BOARD

el: 24010437/24020781/24014701
ax: 24023516/24024068/24044531
Website: www.mpcb.gov.in

Kalpataru Point, 2nd - 4th Floor
Opp. Cine Planet Cinema,
Near Sion Circle, Sion (E)
Mumbai- 400 022.

No.MPCB/B- 4715

Date : 25/11/2019

To

The District Collector,
Thane.

Sub : Before the Hon'ble National Green Tribunal,
Principal Bench, New Delhi
Original Application No.829/2019 filed by
Lt.Col.Sarvadaman Singh Oberoi
v/s
Union of India & Ors.

Ref : Orders dtd.15/07/2019 and 17/09/2019 passed by
Hon'ble National Green Tribunal, New Delhi.

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With regards,

Yours faithfully,

(E. Ravendiran, IAS)
Member Secretary

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Copy submitted to: Hon'ble Principal Secretary, Revenue and Forests Department, Govt. of Maharashtra, Mantralaya, Mumbai – for information.
Copy to: Joint Director (WPC)/Law Officer (P&L Dinv.I), MPCB, Mumbai – for information and necessary follow up.
Copy to: Regional Officer, MPCB, Thane/Sub-Regional Officer, MPCB, Thane - for information and necessary follow up action. They are requested serve the copy of the said letter to the concenred District Collectors

MAHARASHTRA POLLU[redacted]ONTROL BOARD

Tel: 24010437/24020781/24014701
Fax: 24023516/24024068/24044531
Website: www.mpcb.gov.in

महाराष्ट्र

Kalpataru Point, 2nd - 4th Floor
Opp. Cine Planet Cinema,
Near Sion Circle, Sion (E)
Mumbai- 400 022.

No.MPCB/JD(WPC)/B- 3397(18) Date : 11 /09 /2019

To
The Municipal Commissioner,
Municipal Corporation of Greater Mumbai,
Mumbai.

Sub: Directions under Section 33A of the Water (Prevention & Control of Pollution) Act, 1974.

Ref: 1. H'ble NGT Order dated 28/08/2019 in Original Application no 593/2017 in Paryavaran Surksha Samiti & anr v/s Union of India. And Order dated 12.03.2019 in the matter of Original Application no 710/2017.

2. H'ble NGT Order dated 20/09/2018 and 19/12/2018 in Original Application No.673 /2018 in the News Item dated 17/09/2018 in 'The Hindu' authorised by Shri Jacob Koshy under the heading "More River Stretches are now critically polluted"

3. Various Directions issued by the Maharashtra Pollution Control Board with regard to the compliance of Water (Prevention & Control of Pollution) Act, 1974 from time to time.

.....

WHEREAS, the Hon'ble National Green Tribunal vide order dated 28.08.2019 in the matter of Original Application no 593/2017 in Paryavaran Surksha Samit & anr v/s Union of India all the local Bodies and or the concerned department of the state Government have to ensure 100% treatment of the generated sewage and in default to pay compensation which is to be recovered by the State with effect from 01.04.2020. In default of such collection, the State/UTs are liable to pay such compensation. The CPCB is to collect the same and utilise for the restoration of the environment.

AND WHEREAS, the Hon'ble National Green Tribunal vide order dated 28.08.2019 has discussed the methodology developed by CPCB for assessment of Environmental compensation in case of failure of preventing the pollutants being discharged in water bodies in the form of untreated /partially treated sewage by concerned individual/Authority.

AND WHEREAS, Hon'ble National Green Tribunal vide order dated 12.03.2019 in the matter of Original Application no 710/2017, the State Pollution Control Boards are also authorised to recover the environmental compensation from the polluters or laying down their own scale which should not be less than the scale fixed by Central pollution Control Board.

AND WHEREAS, Hon'ble NGT, in various orders passed has clarified that, apart from prosecution, the statutory authorities under provision of the Environmental (Protection) Act, 1986, the Air (Prevention and Control of pollution) Act 1981 and the Water (Prevention and Control of pollution) Act 1974, must in exercise of their incidental powers, prescribed scale of compensation to be collected from the Polluters on "Polluter Pay's Principle"

AND WHEREAS, the Hon'ble National Green Tribunal vide order dated 20/09/2018 in Original Application No.673 /2018directed All States and Union Territories to prepare action plans within two months for bringing all the polluted river stretches to be fit at least for bathing purposes (i.e. BOD < 3 mg/L and FC < 500 MPN/100 ml) within six months from the date of finalisation of the action plans.

AND WHEREAS, you were also directed to maintain wholesomeness of the river water to achieve the standards of bathing purpose and stop all the discharges of untreated / partially treated sewage into the river.

AND WHEREAS, the Board has issued various directions to your Corporation, wherein, you were directed to provide adequate Sewage Treatment Plant and to achieve the effluent discharge standards (i.e. pH 6.5 -9.0, BOD < 10 mg/L, COD < 50 mg/L, TSS < 20 mg/L, fecal Coliform < 100 MPN/100 ml, Total Nitrogen < 10 mg/L, Ammonical Nitrogen < 5 mg/L) of STPs prescribed by the Ministry of Environment, Forest & Climate Change, Govt. of India and implement short term & long term measures for the treatment of sewage and also restrict the untreated / partially treated sewage reaching to the River/creek.

AND WHEREAS, it has been observed that your Corporation is generating sewage to the tune of 2727 MLD out of that 1730 MLD is treated or partially treated and 997 MLD of the sewage is discharging into the River/Creek without treatment this continual practice now become a threat to the environment.

AND WHEREAS, water quality monitoring results of rivers/creeks as indicated that water quality has been affected because of disposal of untreated or partially treated sewage into the water bodies and as a result, there are high number of fecal bacteria making the water body unfit for human consumption or for other uses

AND WHEREAS, your corporation is not having adequate system for sewage collection and its treatment and thus entire/partial waste water either falls into rivers or lakes or remains inundated on land causing potential risk to the ground water contamination.

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NOW THEREFORE, in view of the above stated facts and realizing that rivers and water bodies have been polluted and to prevent further deterioration of surface, sub-surface and coastal waters and in exercise of the powers conferred upon me under Section 33A of the Water (Prevention & Control of Pollution) Act, 1974, you are hereby directed to comply with the following directions.

a) To submit the time bound action plan for 100% treatment of the generated sewage and achieving effluent discharge standards for STPs.
b) Prepare and furnish action plan for utilization of Treated sewage
c) Why the Municipal Corporation shall not be levied by MPC Board the maximum amount of environmental compensation (Total capital cost component amount i.e. Rs. 200 Cr as well as O & M cost component i.e. Rs. 20 Lacs per day) recommended for untreated/partially treated sewage discharge as mentioned in the Hon'ble NGT order dated 28/08/2019 in Original Application no 593/2017 in Paryavaran Surksha Samiti & anr v/s Union of India,

You shall submit your reply/objections within a period of 7 days from the date of receipt of these directions to this office if any, failing which the Board will be constrained to issue appropriate final directions including deposition of environmental compensation, as may deem fit in your case, which may please be noted.

For and on behalf of the
Maharashtra Pollution Control Board

(E. Ravendiran, IAS)
Member Secretary

Copy submitted to:

Hon'ble Chairman, MPCB, Mumbai – for favour of information.

Copy to:

1. Joint Director (WPC)/Law Officer, MPCB, Mumbai – for information and necessary follow up.
2. Regional Officer, MPCB Mumbai/ Sub-Regional Officer Mumbai-I, MPCB: - They are directed to serve the copy and take necessary follow up action

126

MAHARASHTRA POLLUTION CONTROL BOARD

Tel: 24010437/24020781/24014701
Fax: 24023516/24024068/24044531
Website: www.mpcb.gov.in

महाराष्ट्र

Kalpataru Point, 2nd - 4th Floor
Opp. Cine Planet Cinema,
Near Sion Circle, Sion (E)
Mumbai- 400 022.

No.MPCB/JD(WPC)/B- 3397(17)

Date : 11 /09 /2019

To
The Municipal Commissioner,
Kolhapur Municipal Corporation,
Kolhapur.

Sub: Directions under Section 33A of the Water (Prevention & Control of Pollution) Act, 1974.

Ref: 1. H'ble NGT Order dated 28/08/2019 in Original Application no 593/2017 in Paryavaran Surksha Samiti & anr v/s Union of India. And Order dated 12.03.2019 in the matter of Original Application no 710/2017.

2. H'ble NGT Order dated 20/09/2018 and 19/12/2018 in Original Application No.673 /2018 in the News Item dated 17/09/2018 in 'The Hindu' authorised by Shri Jacob Koshy under the heading "More River Stretches are now critically polluted"

3. Various Directions issued by the Maharashtra Pollution Control Board with regard to the compliance of Water (Prevention & Control of Pollution) Act, 1974 from time to time.

.....

WHEREAS, the Hon'ble National Green Tribunal vide order dated 28.08.2019 in the matter of Original Application no 593/2017 in Paryavaran Surksha Samit & anr v/s Union of India all the local Bodies and or the concerned department of the state Government have to ensure 100% treatment of the generated sewage and in default to pay compensation which is to be recovered by the State with effect from 01.04.2020. In default of such collection, the State/UTs are liable to pay such compensation. The CPCB is to collect the same and utilise for the restoration of the environment.

AND WHEREAS, the Hon'ble National Green Tribunal vide order dated 28.08.2019 has discussed the methodology developed by CPCB for assessment of Environmental compensation in case of failure of preventing the pollutants being discharged in water bodies in the form of untreated /partially treated sewage by concerned individual/Authority.

127

AND WHEREAS, Hon'ble National Green Tribunal vide order dated 12.03.2019 in the matter of Original Application no 710/2017, the State Pollution Control Boards are also authorised to recover the environmental compensation from the polluters or laying down their own scale which should not be less than the scale fixed by Central pollution Control Board.

AND WHEREAS, Hon'ble NGT, in various orders passed has clarified that, apart from prosecution, the statutory authorities under provision of the Environmental (Protection) Act, 1986, the Air (Prevention and Control of pollution) Act 1981 and the Water (Prevention and Control of pollution) Act 1974, must in exercise of their incidental powers, prescribed scale of compensation to be collected from the Polluters on "Polluter Pay's Principle"

AND WHEREAS, the Hon'ble National Green Tribunal vide order dated 20/09/2018 in Original Application No.673 /2018directed All States and Union Territories to prepare action plans within two months for bringing all the polluted river stretches to be fit at least for bathing purposes (i.e. BOD < 3 mg/L and FC < 500 MPN/100 ml) within six months from the date of finalisation of the action plans.

AND WHEREAS, you were also directed to maintain wholesomeness of the river water to achieve the standards of bathing purpose and stop all the discharges of untreated / partially treated sewage into the river.

AND WHEREAS, the Board has issued various directions to your Corporation, wherein, you were directed to provide adequate Sewage Treatment Plant and to achieve the effluent discharge standards (i.e. pH 6.5 -9.0, BOD < 10 mg/L, COD < 50 mg/L, TSS < 20 mg/L, fecal Coliform < 100 MPN/100 ml, Total Nitrogen < 10 mg/L, Ammonical Nitrogen < 5 mg/L) of STPs prescribed by the Ministry of Environment, Forest & Climate Change, Govt. of India and implement short term & long term measures for the treatment of sewage and also restrict the untreated / partially treated sewage reaching to the River/creek.

AND WHEREAS, it has been observed that your Corporation is generating sewage to the tune of 96 MLD out of that 73 MLD is treated or partially treated and 23 MLD of the sewage is discharging into the River/Creek without treatment this continual practice now become a threat to the environment.

AND WHEREAS, water quality monitoring results of rivers/creeks as indicated that water quality has been affected because of disposal of untreated or partially treated sewage into the water bodies and as a result, there are high number of fecal bacteria making the water body unfit for human consumption or for other uses

AND WHEREAS, your corporation is not having adequate system for sewage collection and its treatment and thus entire/partial waste water either falls into rivers or lakes or remains inundated on land causing potential risk to the ground water contamination.

NOW THEREFORE, in view of the above stated facts and realizing that rivers and water bodies have been polluted and to prevent further deterioration of surface, sub-surface and coastal waters and in exercise of the powers conferred upon me under Section 33A of the Water (Prevention & Control of Pollution) Act, 1974, you are hereby directed to comply with the following directions.

a) To submit the time bound action plan for 100% treatment of the generated sewage and achieving effluent discharge standards for STPs.
b) Prepare and furnish action plan for utilization of Treated sewage
c) Why the Municipal Corporation shall not be levied by MPC Board the maximum amount of environmental compensation (Total capital cost component amount i.e. Rs. 10 Cr as well as O & M cost component i.e. Rs. 5 Lacs per day) recommended for untreated/partially treated sewage discharge as mentioned in the Hon'ble NGT order dated 28/08/2019 in Original Application no 593/2017 in Paryavaran Surksha Samiti & anr v/s Union of India,

You shall submit your reply/objections within a period of 7 days from the date of receipt of these directions to this office if any, failing which the Board will be constrained to issue appropriate final directions including deposition of environmental compensation, as may deem fit in your case, which may please be noted.

For and on behalf of the
Maharashtra Pollution Control Board

(E. Ravendiran,IAS)
Member Secretary

Copy submitted to:

Hon'ble Chairman, MPCB, Mumbai – for favour of information.

Copy to:

1. Joint Director (WPC)/Law Officer, MPCB, Mumbai – for information and necessary follow up.

Regional Officer, MPCB Kolhapur / Sub-Regional Officer Kolhapur, MPCB,: - They are directed to serve the copy and take necessary follow up action

ANNEXURE-XI

ATR OF PPCC ON DIRECTIONS OF CPCB

No. /PPCC/DIR/STP/JE/2015/121
GOVERNMENT OF PUDUCHERRY
DEPARTMENT OF SCIENCE, TECHNOLOGY & ENVIRONMENT
PUDUCHERRY POLLUTION CONTROL COMMITTEE
III FLOOR, PHBBUILDING, ANNA NAGAR, PUDUCHERRY -5
Phone: (0413) 2201256 Fax: (0413) 2203494

* * *

Puducherry, the 22 JUN 2015

To

As per mailing list.

Sir,

Sub: PPCC – Direction under Section 18(1)(b) of the Water (Prevention and Control of Pollution) Act, 1974 - Treatment and utilization of sewage - Reg.

Ref.: No.A-19014/43/06-MON dated 21.04.2015 received from CPCB, New Delhi.

* * *

With reference to the above, a direction received from CPCB is enclosed for necessary action. As per the direction, it is mandatory that all local / urban bodies shall setup sewerage system for sewage collection, underground conveyance, treatment and its disposal to cover the entire local / urban area. The local / urban bodies shall comply with the all the conditions stipulated in the CPCB directions. Time bound action plan as stipulated in the direction shall be submitted by local /urban bodies and PWD.

For and on behalf of PPCC,

(M. DWARAKANATH)
MEMBER SECRETARY
PUDUCHERRY POLLUTION CONTROL COMMITTEE

O/C 2

Encl: as above.

Copy to.:

1. The Chairman,
   Central Pollution Control Board
   Parivesh Bhawan
   East Arjun Nagar
   Delhi – 110032.

2. Guard File.

DESPATCHED
22/6/2015

IMP BOARD
MOST URGENT

Government of Puducherry
DEPARTMENT OF SCIENCE, TECHNOLOGY & ENVIRONMENT

M.Dwarakanath
Director / Member Secretary
(DSTE, PPCC, PCS&T, PCZMA, SEIAA)

III Floor, Housing Board Complex,
Anna Nagar, Puducherry - 605 005.
Phone : 0413 - 2201256, Fax : 0413 - 2203494
email: dste.pon@nic.in
Web: http://dste.puducherry.gov.in

D.O. Lr. No.006/DIR/PA/2017/ 855

06 JAN 2017

Dear Shri. Swaminathan,

The Central Pollution Control Board (CPCB) has issued certain direction, in respect of discharge of untreated or partially treated sewage into the coastal water which resulted in the presence of high number of Saecal coliform and BOD than the prescribed limits. They further directed, those cities which are not having adequate system for sewerage collection and its treatment which has resulted in such existence of parameters as mentioned above (copy enclosed).

2. Now CPCB, has issued the following directions to Puducherry Pollution Control Committee and has sought an action taken report within 30 days. Accordingly the following directions are issued for strict compliance.

i. to ensure setting up of sufficient capacity of sewage treatment plant including provision for sewage treatment to cover the entire local / urban areas.

ii. You are also directed to apply for consent under Water Act and Air Act for each of your STPs / Treatment systems.

iii. An action taken report, clearly indicating the quantum generated, the quantum partially treated, the quantum, that is completely treated, plan of action for the untreated sewage with clear timelines may be submitted on or before 31st January'2017.

3. This may please be treated as most urgent.

With personal regards,

Yours Sincerely

(M. DWARAKANATH)
DIRECTOR
O/C

The Chief Engineer,
Public Works Department,
Puducherry.

580/3W/X

06/01/17

DESPATCHED

By Reg Post with A.D

NO.4619/PPCC/DIR/OM/SCI-PPCC/2017/ 696

GOVERNMENT OF PUDUCHERRY
DEPARTMENT OF SCIENCE, TECHNOLOGY & ENVIRONMENT
PUDUCHERRY POLLUTION CONTROL COMMITTEE
III-FLOOR, PONDICHERRY HOUSING BOARD BUILDING, PUDUCHERRY – 605005.
Phone: (0413) 2201256 Fax: (0413) 2203494

* * *

Puducherry, the 21 AUG 2017

DIRECTION

Sub: PPCC – CPCB Directions Under Section 18(1) (b) of the Water (Prevention and Control of Pollution) Act, 1974 regarding treatment and utilization of sewage and disposal in Coastal Towns of India.

Ref:
1. CPCB direction dated 21.04.2015 communicated by this office on 22.06.2015.
2. CPCB reminder dated 20.07.2015 communicated by this office on 20.07.2015.
3. CPCB direction dated 15.12.2016 communicated by this office on 06.01.2017.
4. PPCC Letter No.4619/PPCC/LTR/STP/OM/SCI/2017/289 dated 02.06.2017.
5. PPCC Letter No.4619/PPCC/LTR/STP/OM/SCI/2017/290 dated 02.06.2017.
6. PPCC Letter No.2531/PPCC/STP-INV/SCI/2017/557dated 24.07.2017.

* * *

WHEREAS, sewage, the single major source for water resources deterioration contributes 70% of the pollution load to water bodies. Consumption of polluted water adversely impact human health and aquatic life. Quality of treated sewage generally of lower standard further adding to problem.

AND WHEREAS, CPCB direction dated 21.04.2015 states that the sewage treatment capacity of Puducherry state is 68.5 MLD in contrast to sewage generation of 136 MLD. 67.5MLD untreated sewage discharged to water bodies is responsible for deteriorating its water quality.

AND WHEREAS, the cities and towns are not having adequate system for sewage collection and its treatment and thus entire waste water either falls into rivers or lakes or tidal influenced water bodies or seas or remains inundated on land causing potential risk to the ground water contamination.

AND WHEREAS, the Central Pollution Control Board in its 168th meeting held on 27.03.2015 resolved to notify the standards for treated sewage. These standards for discharge of treated sewage from STPs have also been endorsed in the Minister's Conference held during April 6-7, 2015 and 59th Conference of Chairman and Member Secretaries of Pollution Control Boards and Pollution Control Committees held on April 8, 2015.

AND WHEREAS, CPCB has issued a direction to the Puducherry Pollution Control Committee on 21.04.2015 and 15.12.2016 instructing the committee to issue Direction to the local / urban bodies to set up a sewerage treatment system for sewage collection, underground conveyance, treatment and its disposal to cover the entire local/urban area to bridge the widening treatment gap along with enforcement of consent management in line with standards for sewage treatment (Annexure–I) which was communicated to the PWD vide letter 22.06.2015 and 02.06.2017 respectively. CPCB has instructed PPCC to issue directions to all municipalities and other concerned authorities in the state/UT responsible for treatment and disposal of sewage to the following effect.

AND WHEREAS, under The Water (Prevention and Control of Pollution) Act 1974 the stream includes (i) river; (ii) water course (whether flowing or for the time being dry); (iii) inland water (whether natural or artificial); (iv) sub-terranean waters; (v) sea or tidal waters . One of the mandate of the Pollution Control Board /Committee is to plan a comprehensive programme for the prevention, control or abatement of pollution of streams and wells in the State and to keep it away from pollution.

AND WHEREAS, discharge of the untreated domestic effluents/sewage into the stream/ river/tidal influenced water bodies/sea is a violation under section 24 of the Water (Prevention and Control of Pollution) Act 1974 where it envisage on Prohibition on use of stream or well for disposal of polluting matter.

By Reg Post with A.D

NO.4619/PPCC/DIR/OM/SCI-PPCC/2017/ 962

GOVERNMENT OF PUDUCHERRY
DEPARTMENT OF SCIENCE, TECHNOLOGY & ENVIRONMENT
PUDUCHERRY POLLUTION CONTROL COMMITTEE
III-FLOOR, PHB BUILDING, PUDUCHERRY – 605005.
Phone: (0413) 2201256 Fax: (0413) 2203494

* * *

Puducherry, the 16 OCT 2017

DIRECTION

Sub: PPCC –Directions under Section 33A of the Water (Prevention and Control of Pollution) Act, 1974 .

Ref:
1. CPCB direction dated 21.04.2015 communicated by this office on 22.06.2015.
2. CPCB reminder dated 20.07.2015 communicated by this office on 20.07.2015.
3. CPCB direction dated 15.12.2016 communicated by this office on 06.01.2017.
4. PPCC Letter No.4619/PPCC/LTR/STP/OM/SCI/2017/289 dated 02.06.2017.
5. PPCC Letter No.4619/PPCC/LTR/STP/OM/SCI/2017/290 dated 02.06.2017.
6. PPCC Letter No.2531/PPCC/STP-INV/SCI/2017/557dated 24.07.2017.
7. PPCC direction No.4619/PPCC/DIR/OM/SCI/2017/696 dated 21.08.2017.

* * *

WHEREAS, Puducherry Pollution Control Committee has issued various direction vide ref (1) to (7) above related to the treatment and utilization of sewage and disposal in Coastal Towns of Puducherry.

WHEREAS, sewage, the single major source for water resources deterioration contributes 70% of the pollution load to water bodies. Consumption of polluted water adversely impact human health and aquatic life. Quality of treated sewage generally of lower standard further adding to problem.

AND WHEREAS, the cities and towns are not having adequate system for sewage collection and its treatment and thus entire waste water either falls into rivers or lakes or tidal influenced water bodies or seas or remains inundated on land causing potential risk to the ground water contamination.

AND WHEREAS, the Central Pollution Control Board in its 168th meeting held on 27.03.2015 resolved to notify the standards for treated sewage. These standards for discharge of treated sewage from STPs have also been endorsed in the Minister's Conference held during April 6-7, 2015 and 59th Conference of Chairman and Member Secretaries of Pollution Control Boards and Pollution Control Committees held on April 8, 2015.

AND WHEREAS, CPCB has issued a direction to the Puducherry Pollution Control Committee on 21.04.2015 and 15.12.2016 instructing the committee to issue Direction to the local / urban bodies to set up a sewerage treatment system for sewage collection, underground conveyance, treatment and its disposal to cover the entire local/urban area to bridge the widening treatment gap along with enforcement of consent management in line with standards for sewage treatment (Annexure-I) which was communicated to the PWD vide letter 22.06.2015 and 02.06.2017 respectively. CPCB has instructed PPCC to issue directions to all municipalities and other concerned authorities in the state/UT responsible for treatment and disposal of sewage to the following effect.

AND WHEREAS, discharge of the untreated domestic effluents/sewage into the stream/ river/tidal influenced water bodies/sea is a violation under section 24 of the Water (Prevention and Control of Pollution) Act 1974 where it envisage on Prohibition on use of stream or well for disposal of polluting matter.

AND WHEREAS, Puducherry Pollution Control Committee in its direction has directed Public Works Department to carry out the below mentioned activities and to submit a report by 31.08.2017. PPCC has not received any communication from the proponent related to the compliance for the direction so far. Since the mentioned details was also requested by the Central Pollution Control Board so as to submit it before the Parliamentary Standing Committee for "Marine and Coastal Pollution:

xiii) The treated waste water from the SBR plant is let out into Oxidation Pond No. 1 which makes the entire treatment efforts a total failure.

xiv) The consent of the unit was expired on 30.11.2016 and the unit has submitted the consent application form on 12.01.2017 in continuation , the unit was issued a letter by the PPCC on 02.06.2017 requesting them to submit the point wise compliance status of the consent issued to the unit the unit has not yet responded.

NOW THEREFORE, you are hereby directed to comply with the following in addition to the earlier issued directives;

i) Continuous flow measure devise with display and transfer system shall be installed at the inlet and outlet of the STPs and the data shall be provided to PPCC through continuous online monitoring system as mandated by CPCB.

ii) Sensors with display and transfer provisions shall be installed to monitor all the treated sewage parameters and the data shall be provided to PPCC through continuous online monitoring system.

iii) PWD shall carry out a scientific study with specific reference to the ground water quality in the surrounding regions as the treated waste water is being discharged into the adjacent lands forming a large water body for. Directions was already issued to PWD vide letter dated 16.10.2012 and the same is yet to be complied.

iv) Monitoring bore wells shall be established around the STP area in coordination with the state groundwater Authority to assess the ground water quality regularly as stipulated in the water consent.

v) The broken by pass pipelines in the oxidation ponds shall be repaired immediately and the leakages shall be arrested.

vi) The oxidation ponds shall be desilted regularly.

vii) Discharge of the untreated waste water for the land discharge shall be stopped.

viii) Flaring arrangements shall be made for methane gas emitted from the UASBR. In the long term, efforts shall be taken for energy recovery from the methane gas.

ix) Pisciculture shall be recommenced in the nursery and fish ponds.

x) The DO sensors in the SBR plant shall be repaired and put into use.

xi) The SCADA system in the SBR plant shall be repaired and put into use. Records generated from this system shall be maintained properly and shown to the inspecting officials of the PPCC.

xii) Discharge of treated waste water from the SBR plant into oxidation pond shall be stopped immediately. Measures shall be taken to enhance the utilization of the treated Water for non potable usage, which is also being emphasized by the CPCB in its direction dated 21.04.2015. Excess water if any shall be discharged into nearby drainage channel for flushing the channel.

xiii) Point wise compliance report on the consent conditions shall be submitted for processing the current renewal application as per the PPCC letter dated 02.06.2017.

You are requested to acknowledge the receipt of this direction and shall communicate the status on the action plan and its implementation on or before 31.10.2017.

For & on behalf of PPCC,

(M. DWARAKANATH)
MEMBER SECRETARY
PUDUCHERRY POLLUTION CONTROL COMMITTEE

To

The Chief Engineer,
Public Works Department,
Puducherry.

Copy to.
1. Standing guard file.

DESPATCHED

No. 4619/PPCC/LTR/STP/OM/SCI (PPCC)/2017/ 290

GOVERNMENT OF PUDUCHERRY
DEPARTMENT OF SCIENCE, TECHNOLOGY & ENVIRONMENT
PUDUCHERRY POLLUTION CONTROL COMMITTEE
III FLOOR, PHB BUILDING, ANNA NAGAR, PUDUCHERRY – 5.
Phone: (0413) 2201256, Fax: (0413) 2203494

***

Puducherry, the 02 JUN 2017

To
The Director,
Local Administration Department,
Puducherry.

Sir,

Sub: PPCC - Operational status of the Sewage Treatment Plant - Treatment and utilization of sewage from the Sewage Treatment Plant (STP)- Reg.

Ref: i) CPCB direction No. File No A-19014/43/06-MON dated 21.04.2015.
ii) CPCB direction dated 09.10.2015.
ii) CPCB letter dated 29.05.2017.

***

The CPCB has issued direction vide reference (i) and (ii) above (copy enclosed) for necessary treatment and utilization of sewage from the Sewage Treatment Plant (STP) and shall comply with certain points for compliance. The Parliamentary Committee on Marine and Coastal Pollution is going to held up in the coming month, the CPCB is compiling the data's pertaining to the direction issued by them.

The compliance status for the points mentioned below shall be provided to PPCC so as to compile it and send it to CPCB:

i. All the sewage treatment plant presently functioning in the UT of Puducherry and to be proposed in future shall comply with the standards prescribed by the CPCB.

ii. All the STPs / Local Bodies shall seek consent under Water (Prevention and Control of Pollution) Act, 1974 from the Puducherry Pollution Control Committee.

iii. Secondary treated sewage should be mandatorily sold for use for non potable purposes such as industrial process, railways & bus cleaning, flushing of toilets through dual piping, horticulture and irrigation. No potable water to be allowed for such activities. They will also digest methane for captive power generation to further improve viability of STPs.

iv. Dual piping system should be enforced in new housing constructions for use of treated sewage for flushing propose.

v. Each Municipal Authority and the concerned authority shall submit a time bound action plan for setting up sewerage system covering proper collection, treatment and disposal of sewage generated in the local/urban area and such plan shall be submitted by the municipal authority to the State Board.

vi. In case of disposal of effluents on land or river or any water body including coastal water/creek or a drain, the treated effluents shall meet the suggested standards.

vii. No untreated waste water shall be discharged into any of the surface water bodies.

Favorable reply in this regard is highly solicited.

For and on behalf of PPCC,

(M. DWARAKANATH)
MEMBER SECRETARY
PUDUCHERRY POLLUTION CONTROL COMMITTEE

Copy to: Standing Guard File.

DESPATCHED 5/6/2017

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URGENT

No. 26/PPCC/ACP/FISH (D)/DIR/SCI/2019/656
GOVERNMENT OF PUDUCHERRY
DEPARTMENT OF SCIENCE, TECHNOLOGY & ENVIRONMENT
PUDUCHERRY POLLUTION CONTROL COMMITTEE
III FLOOR, PHB BUILDING, ANNA NAGAR, PUDUCHERRY – 5.
Phone: (0413) 2201256, Fax: (0413) 2203494

***

Puducherry, the 3 OCT 2019

Sir,

Sub: PPCC – Inventorisation and Operational status of the Sewage Treatment Plant – Treatment of Sewage and utilization of sewage for restoration of water quality of river/streams – Ensuring compliance of the orders dated 03.08.2018, 28.08.2019 passed by the Hon'ble NGT in the Matter of Paryavaran Suraksha Samiti & Anr.v/s Union of India & Ors (OA No.593 of 2017) - Reg.

Ref:

1. CPCB direction dated 21.04.2015 communicated by this office on 22.06.2015.
2. CPCB reminder dated 20.07.2015 communicated by this office on 20.07.2015.
3. CPCB direction No.File No A-19014/43/06-MON dated 21.04.2015&15.12.2016.
4. CPCB direction dated 15.12.2016 communicated by this office on 06.01.2017.
5. PPCC D.O Lr No.SC/CETP/EE/2017/164 dated 26.05.2017.
6. CPCB letter No F.No.B-29012/IPC-VI/2016-17/35 dated 03.04.2017.
7. PPCC D.O.Lr.No.006/DIR/PA/2017/855 dated 06.01.2017.
8. NGT order dated 28.08.2019 in the matter of Paryavaran Suraksha Samiti & Anr.v/s Union of India & Ors (OA No.593 of 2017)

***

WHEREAS, The Central Pollution Control Board (CPCB) has issued Direction vide reference (1) (2), (3), (4) & (6) under Section 18(1)(b) of the Water (Prevention and Control of Pollution) Act, 1974 regarding treatment and utilization of sewage. In the report of the CPCB it is mentioned that the disposal of the untreated or partially treated sewage into coastal water resulting in the high number of faecal bacteria against the desirable limit of 100 MPN/ 100ml and also exceed the BOD level of 3mg/l against the criteria for SW-II.

AND WHEREAS, The CPCB has directed PPCC to ensure that local / urban bodies set up Sewage Treatment Plants of adequate capacity including provision for sewerage system to cover the entire local / urban areas and accordingly grant consent. The Treated water shall comply with the standard. In this regard PPCC has communicated the direction issued by the CPCB to the Public works Department and Local Administration Department vide reference cited above.

AND WHEREAS, CPCB has instructed that Secondary treated sewage should be mandatorily sold for use for non potable purposes such as industrial purposes, railways, bus cleanings , flushing of toilets through dual piping, horticulture and irrigation. No potable water to be allowed for such activities.

Chief Secretary has proposed to review the compliance status on the Matter of Paryavaran Suraksha Samiti & Anr.v/s Union of India & Ors (OA No.593 of 2017) of Hon'ble National Green Tribunal (NGT).

AND NOW THEREFORE, it is requested you to take necessary measures as mentioned above to carry out inventorisation of the quantity of the sewage generated in the particular commune/ municipal limit and utilization of sewage for non potable usage. Necessary sewage Treatment system shall be constructed within the stipulated time so as to comply with the Hon'ble NGT directions this will prevent any sewage/ effluent discharging into the water bodies and help in restoring the water bodies/ coastal eco system.

You are requested to provide the compliance status of the above mentioned communications/ directions within 30 days.

The action taken report in this regard is highly solicited.

For and on behalf of PPCC,

(SMITHA.R)
MEMBERSECRETARY
PUDUCHERRY POLLUTION CONTROL COMMITTEE

To
1. The District Magistrate, Puducherry
2. The Chief Engineer, Public Works Department, Puducherry
3. The Director, Local Administrative Department, Puducherry

– For information.

4. The Director, Directorate of Industries & Commerce, Puducherry
5. The Executive Engineer (PHD), Public Works Department, Puducherry
6. The Commissioner, Oulgaret Municipality, Puducherry.
7. The Commissioner, Puducherry Municipality, Puducherry.
8. The Commissioner, Karaikal Municipality, Puducherry.
9. The Commissioner, Mahe Municipality, Puducherry.
10. The Commissioner, Yanam Municipality, Puducherry.
11. The Commissioner, Ariankuppam Commune Panchayat, Puducherry.
12. The Commissioner, Bahour Commune Panchayat, Puducherry.
13. The Commissioner, Mannadipet Commune Panchayat, Puducherry.
14. The Commissioner, Nettapakkam Commune Panchayat, Puducherry.
15. The Commissioner, Villianur Commune Panchayat, Puducherry.
16. The Commissioner, T.R. Pattinam Commune Panchayat, Karaikal.
17. The Commissioner, Thirunallar Commune Panchayat, Karaikal
18. The Commissioner, Kottucherry Commune Panchayat, Karaikal.
19. The Commissioner, Neravy Commune Panchayat, Karaikal.
20. The Commissioner, Nedungadu Commune Panchayat, Karaikal.

– For necessary action.

Copy to:
1. The Environmental Engineer, DSTE, Puducherry.
2. The Scientist, PPCC, Puducherry.
3. The Junior Engineer-I, DSTE, Puducherry
4. The Junior Engineer-II, DSTE, Puducherry
5. The Junior Scientific Assistant, DSTE, Puducherry.
6. The Assistant Environmental Engineer, PPCC, Puducherry.
7. The Junior Scientific Assistant, PPCC, Puducherry.
8. Guard File.

– For necessary follow up action.

List of Addressees:

The Collector, Karaikal.
The Director, Local Administration Department, Puducherry.
The Project Director, DRDA, Puducherry.
The Chief Engineer, Public Works Department, Puducherry.
The Commissioner, Puducherry Municipality, Puducherry.
The Commissioner, Oulgaret Municipality, Puducherry.
The Commissioner, Ariankuppam Commune, Puducherry.
The Commissioner, Bahour Commune, Puducherry.
The Commissioner, Mannadipet Commune, Puducherry.
The Commissioner, Nettapakkam Commune, Puducherry.
The Commissioner, Villianur Commune, Puducherry.
The Commissioner, Karaikal Municipality, Karaikal.
The Commissioner, T.R. Pattinam Commune, Karaikal.
The Commissioner, Neravy Commune, Karaikal.
The Commissioner, Kottucherry Commune, Karaikal.
The Commissioner, Nedungadu Commune, Karaikal.
The Commissioner, Thirunallar Commune, Karaikal.
The Commissioner, Mahe Municipality, Mahe.
The Commissioner, Yanam Municipality, Yanam.

AND WHEREAS, the water samples taken on 31.05.2017 from the outlet point of the treatment system operated by the PWD and the analysis report reveals that the assessed parameters: *Total suspended solids, Ammonical Nitrogen, Chemical Oxygen Demand, BioChemical Oxygen Demand value of the treated water taken from the Oxidation pond and UASB does not meet the latest standards as stipulated by the CPCB vide its direction dated 21.04.2015 as per the (annexure I).*

NOW THEREFORE you are **directed under Section 33A Water (Prevention and Control of Pollution) Act 1974:**

i. *To carry out inventorisation of the sewage generation and its treatment in U.T of Puducherry.*
ii. *All the sewage treatment plant presently functioning in the UT of Puducherry and to be proposed in future shall comply with the standards prescribed by the CPCB.*
iii. *All the STPs / Local Bodies shall seek consent under Water (Prevention and Control of Pollution) Act, 1974 from the Puducherry Pollution Control Committee.*
iv. *Secondary treated sewage should be mandatorily sold for use for non potable purposes such as industrial process, railways & bus cleaning, flushing of toilets through dual piping, horticulture and irrigation. No potable water to be allowed for such activities. They will also digest methane for captive power generation to further improve viability of STPs.*
v. *Dual piping system should be enforced in new housing constructions for use of treated sewage for flushing propose.*
vi. *Each Municipal Authority / operator of STPs and the concerned authority shall submit a time bound action plan for setting up sewerage system covering proper collection, treatment and disposal of sewage generated in the local/urban area and such plan shall be submitted by the municipal authority to the Pollution Control Committee within 60 days. The action plan shall be brought in public domain.*
vii. *In case of disposal of effluents on land or river or any water body including coastal water/creek or a drain, the treated effluents shall meet the suggested standards.*
viii. *Untreated sewage shall not be disposed into the river or any other receipient system.*
ix. *Local/urban body/PWD to set up STPs of adequate capacity and provide sewerage system to cover the entire local/urban areas and to ensure complete treatment of sewage generated.*
x. *Existing sewage treatment plants if any, as applicable shall be properlymaintained to comply with the standards given in (annexure-I) .At the inlet and outlet of the sewage treatment plant, online monitoring devices should be installed to monitor the consented parameters.*
xi. *The municipal authority shall properly manage the waste water flowing in drains and take required actions to ensure that such waste water is treated and disposed off in accordance with standards given in annexure-I.*

The above details was also requested by the Central Pollution Control Board so as to submit it before the Parliamentary Standing Committee for "Marine and Coastal Pollution."

You are requested to acknowledge the receipt of this directon and shall communicate the status on the action plan and its implementation on or before 31.08.2017 marking a copy to Central Pollution Control Board (CPCB).

For & on behalf of PPCC,

(M. DWARAKANATH)
MEMBER SECRETARY
PUDUCHERRY POLLUTION CONTROL COMMITTEE

To

o/c 15/8/2017

1. The Chief Engineer, Public Works Department, Puducherry.
2. The Director, Local Administrative Department, Puducherry.

Copy to:

1. Zonal Officer, CPCB, Nisarga Bhawan, A block, 1st and 2nd floors, Thimmaiah Road, 7th Main, Shivanagar, Banglore 560079.
2. Standing guard file.

ACHER

i. *To carry out inventorisation of the sewage generation and its treatment in U.T of Puducherry.*

ii. *All the sewage treatment plant presently functioning in the UT of Puducherry and to be proposed in future shall comply with the standards prescribed by the CPCB.*

iii. *All the STPs / Local Bodies shall seek consent under Water (Prevention and Control of Pollution) Act, 1974 from the Puducherry Pollution Control Committee.*

iv. *Secondary treated sewage should be mandatorily sold for use for non potable purposes such as industrial process, railways & bus cleaning, flushing of toilets through dual piping, horticulture and irrigation. No potable water to be allowed for such activities. They will also digest methane for captive power generation to further improve viability of STPs.*

v. *Dual piping system should be enforced in new housing constructions for use of treated sewage for flushing propase.*

vi. *Each Municipal Authority / operator of STPs and the concerned authority shall submit a time bound action plan for setting up sewerage system covering proper collection, treatment and disposal of sewage generated in the local/urban area and such plan shall be submitted by the municipal authority to the Pollution Control Committee within 60 days. The action plan shall be brought in public domain.*

vii. *In case of disposal of effluents on land or river or any water body including coastal water/creek or a drain, the treated effluents shall meet the suggested standards.*

viii. *Untreated sewage shall not be disposed into the river or any other recipient system.*

ix. *Local/urban body/PWD to set up STPs of adequate capacity and provide sewerage system to cover the entire local/urban areas and to ensure complete treatment of sewage generated.*

x. *Existing sewage treatment plants if any, as applicable shall be properly maintained to comply with the standards given in (annexure-I) At the inlet and outlet of the sewage treatment plant, online monitoring devices should be installed to monitor the consented parameters.*

xi. *The municipal authority shall properly manage the waste water flowing in drains and take required actions to ensure that such waste water is treated and disposed off in accordance with standards given in annexure-I.*

AND WHEREAS, The sewage treatment plant with oxidation ponds (12.5 MLD capacity) at Lawspet was inspected by the officials of PPCC on 08.08.2017 and 09.08.2017. The observations are briefed below for your reference;

i) All the three STPs were in operation at the time of inspection.

ii) There is no flow measuring device (flow meter, V notch etc) in all these three plants to measure the quantity of the effluents inflow or outflow.

iii) The bypass pipeline in the oxidation ponds was found to be broken between pond No. 1 & 3 and large pool of sewage water was found to be stagnating on the ground.

iv) The sewage from the Oxidation Pond No. 2 is directly let out into the land on the south western side of the ponds.

v) The oxidation pond-4 is not desilted regularly, leading to accumulation of silt and growth of plants..

vi) The fish pond and the nursery pond is un-utilized and no pisciculture practiced.

vii) The monitoring wells around the STP to periodically check the ground water quality has not been established as per the consent issued to the STP vide date 3011.2015.

viii) The consent was issued to the unit to use the treated water for grass farm and the balance water shall be discharged to the drainage canal. The surplus water is spread on land located south west of the plant forming a large water body.

ix) High growth of algae and aquatic weeds are found in the water body indicating high nutrient content. This may be due to improper treatment of the discharge waste water.

x) Methane is directly vented into the atmosphere from the UASBR plant. Generation of power or flaring of the gas may be done as this is a high potential Green House Gas than CO_2.

xi) The D.O. Sensor in the SBR basin was not working.

xii) The SBR Plant is not used to the full design capacity of 17 MLD and it is operating only at average 26% of the design capacity between April 2016 to July 2017. The average treatment quantity was 4.469 MLD during this period and the maximum treated quantity in a day achieved was 12.515 MLD. From Aug – 2017 data of treated quantity is not available as the SCADA system is not working.

AND WHEREAS, The Hon'ble National Green Tribunal is ensuring the compliance of the orders dated 03.08.2018 passed by the Hon'ble NGT in the Matter of Paryavaran Suraksha Samiti & Anr.v/s Union of India & Ors (OA No.593 of 2017) .

AND WHEREAS, The Hon'ble National Green Tribunal in its order dated 23.08.2019 directed that ;

> All the *local bodies and or the concerned departments of the state government have to ensure 100% treatment of the generated sewage and in default to pay compensation which is to be recovered by the states/UTs, with effect from 01.04.2020. In default of such collections, the states/UTs are liable to pay such compensation. The CPCB is to collect the same and utilize for restoration of the environment. The Chief Secretaries of all the state/UTs may furnish their respective compliance reports on this subject in OA No.606/2018.*

AND WHEREAS, The Hon'ble National Green Tribunal in its order dated 17.09.2019 in the matter of OA No.829/2019 Lt.Col.Sarvadaman Singh Oberoi vs Union of India stated that the District Magistrate may also cover the subject of coastal and marine pollution in the District Environment Plans to be prepared with reference to order of the tribunal dated 15.07.2019 (in the O.A No.710/2017 at para 8) and furnish the report to the chief Secretaries.

AND WHEREAS, Puducherry Pollution Control Committee has issued several communications and direction vide reference (1) to (8) for necessary compliance.

AND WHEREAS, there are incidents being reported about the large scale fish mortality on 25.09.2019 in the Chunnambar, which has been identified as one of the Polluted river stretch in UT of Puducherry as per the CPCB report .The Hon'ble NGT in Original application No.673/2018 dated 08.04.2019 has directed that River Action plan to be prepared bythe state and shall cover the following;

(b) Channelization, treatment, utilization and disposal of treated domestic sewage.

(i) Identification of towns in the catchment of river and estimation of quantity of sewage generated and existing sewage treatment capacities to arrive at the gap between the sewage generation and treatment capacities;

(ii) Storm water drains now carrying sewage and sullage joining river and interception and diversion of sewage to STPs,

(iii) Treatment and disposal of septage and controlling open defecation,

(iv) Identification of towns for installing sewerage system and sewage treatment plants.

No. 4313 PW/CE/EE(P)/AE(P)2/F.201-1/2015-16
GOVERNMENT OF PUDUCHERRY
PUBLIC WORKS DEPARTMENT
...

Puducherry, dated, 16.02.2016

To

The Member Secretary,
Central Pollution Control Board,
Ministry of Environment, Forest & Climate Change,
Government of India,
Parivesh Bhavan, East Arjun Nagar,
Delhi-110 032.

Sir,

Sub: PW – Status of Directions issued under Sec 5 of Environment (Protection) Act, 1986 regarding treatment and utilization of sewage for restoration of water quality of river – Reg.

Ref: 1. No.3046/PW/CE/EEP/AE(P)2/F.201-1/2015-16 dt. 24.11.15
2. Letter No.A-14011/1/2015-Mon/6532 dated 21.01.16
3. Letter No.Tech/24/STP/ZOB/2015-16/1909 dated 01.02.2016.
4. Email dated 05.02.2016.

...

In pursuance to the above, It is informed that the strategic plan for implementation of the Directions of the Central Pollution Control Board has been mailed to Central Pollution Control Board vide email dated 05.02.2016 vide 3rd reference. Copy of the same is enclosed. In this regard, hard copy of the same is also communicated herewith for kind reference.

However in respect of solid waste, the same is dealt by the Local Administration Department. Hence, the copies of Central Pollution Control Board references are sent to Director, Local Administration Department.

(P SWAMINATHAN)
CHIEF ENGINEER

O/C

Encl:
1. Copy of email dated 05.02.2016.
2. Hard copy of the strategic plan.

Copy to:-

1. The Director, Local Administration Department } along with copies of references received from CPCB for necessary action in respect of solid waste.

2. The Executive Engineer, Public Health Division, PWD, Puducherry.

F:\PA to EE (Dec-2015)\letter

16/2/2016

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Gmail

COMPOSE

Inbox (24)

Starred

Sent Mail

Drafts (6)

DRAINAGE

Directions under section 5 of the Environment (Protection) A... and utilization of sewage for restoration of water quality of ri...

DRAINAGE PHD <aedrphd@gmail.com>

to anjana.cpcb@nic.in

I.D Note.pdf

Anjana Kumari V Environmental Engineer CPCB via nic.in

to me

Sir,
Information received. It is also requested to send the details of Solid wast...

On 02/05/16 05:44 PM, **DRAINAGE PHD** <aedrphd@gmail.com> wrote:

No recent chats
Start a new one

Click here to Reply or Forward

0.17 GB (1%) of 15 GB used
Manage

Terms - Privacy

to anjana.cpcb held today meeting. Send on discuss with EE(P), we are [illegible] [illegible]

OFFICE OF THE EXECUTIVE ENGINEER
PUBLIC HEALTH DIVISION
P.W.D., PUDUCHERRY

6865 1039 ***
No. /PW/PHD/F.No. /2015-16 DT. 9/12/15

I.D. NOTE

Sub: PW – PHD – Directions under section 5 of the Environment (Protection) Act, 1986 regarding treatment and utilization of sewage for restoration of water quality of river – Reg.

Ref: (1) File No. A-14011/1/2015-MON. dt.02.11.2015.
(2) No.3047/PW/CE/EE(P)/AE(P)2/F.201-1/2015-16 dt 24.11.2015

****

This relates to the directions under Section 5 of the Environment (Protection) Act, 1986, communicated by the Central Pollution Control Board vide reference cited (1) above.

2. The Chairman CPCB under section 5 of the Environment (Protection) Act 1986 has issued direction to the Public Works Department and the report with regard to the directions are placed as under:

(i) At present the sewage generated from the town area zone – I (Pondicherry Town), zone – II (Muthialpet), part of adjoining Zone – III (Nellithope, part of zone – IV (Saram) is being collected through a well laid underground sewerage system and pumped to the sewage treatment plants at Sewage Farm, with an extent of 125 acres, at Lawspet and is properly treated. The treated effluent is used for raising the fodder crop at Sewage Farm. Further another state of the art, one treatment plant at Lawspet with the capacity of 17 MLD based on SBR process is also completed and ready for full swing operation, once sewage contributing area is connected. Under comprehensive Sewerage Scheme, it is also proposed to provide further 2 Nos of similar treatment plants of 17MLD capacity each, one at Kanaganeri and another at Dubrayapet. On completion and commissioning of these plants, the 100% sewage generated in the urban areas of Puducherry will be treated by centralized system and disposed off. Hence as of now no untreated sewage is disposed in any river, any other recipient system.

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(ii) As for as sewage generated from the entire urban areas and its treatment, it is stated that in addition to existing sewage treatment plant i.e at sewage farm at Lawspet 12.5MLD through oxidation pond, 2.5MLD by UASB, one similar 2.50MLD of UASB at Dubrayapet, 3 nos of 17MLD capacity SBR process treatment plant, one at sewage farm, Lawspet another at Kanaganeri and Dubrayapet are nearing completion and proposed to be commissioned before March 2016. This will ensure the complete treatment of sewage.

(iii) The treated effluent from the sewage treatment plant proposed under JNNURM (3 Nos of 17MLD STP based on SBR Techology) will meet the standard as given in the Annexure – I vide reference.

(iv) The existing treatment plants facilities based on oxidation pond and UASB is maintained properly. The treatment by these methods is falling short of complete treatment leaving nutrients like nitrate and phosphate. Further, as of now no treatment is given for the removal enteric Bacteria and virus from the effluent. Hence it is proposed to outpace the erstwhile, part of secondary treatment with the full fledged complete treatment method by providing one another 16MLD sewage treatment plant at Sewage farm at Lawspet. However periodically the sewage sample a the inlet and outlet at sewage farm is collected and the parameters are tested by the Government Laboratory.

(v) Public Works Department is addressing the sewage collection, transportation & treatment. The necessary consent under water (Prevention and control of pollution act 1974 from Pondicherry pollution control board has already been obtained for the existing treatment plant and applied for the proposed treatment plant at Lawspet. Consent to establish the sewage treatment plant at Kannaganeri and Dubrayapet has already obtained and the consent to operate for these plants will be applied upon completion.

(vi) The Public Works Department while applying for consent to operate STP categorically mentioned the quantum of waste water management according to the site specific conditions. All the steps towards the treating the waste water and disposing the waste water in accordance with standard given the Annexure – I vide the above reference is already in place.

(vii) The Public Works Department has already proposed the comprehensive underground sewerage system for the urban areas of Puducherry under JNNURM as the time bound action plan is nearing completion and it is expected to be completed by March 2016. Once the action plan is completed, action will be taken to publish in public domain.

Submitted for information for necessary action please.

EXECUTIVE ENGINEER

SUPERINTENDING ENGINEER-II 19.1.16

CHIEF ENGINEER 19.1.16

EE (P)

OFFICE OF THE CHIEF ENGINEER
P.W.D PUDUCHERRY
Receipt No. 2029/CE/PA
Received on ......
Despatched on 19/1/16
PA to CE

OFFICE OF THE EXECUTIVE ENGINEER (PLANNING)
C... Office, P.W.D., Puducherry
Receipt No. 10517
Date : 19/1/16

INVESTORIZATION OF SEWAGE TREATMENT PLANTS LOCATED IN THE UNION TERRITORY OF PUDUCHERRY

Sl. No.	City/Town	STP Location	STP Commissioned in (Year)	Status (Operation / Non Operation / Under construction	STP Installed capacity	Actual Utilization Capacity	Technology (UASB/ASP/OP/	Water Supply (lpcd)	Disposal (land, River, Sea or any other)	Consent Status
1.	Lawspet, Puducherry	Sewage Farm, Lawspet, Puducherry	STP—1, Oxidation Ponds (1980 - 1990)	Operational	12.5 MLD	12.5 MLD	Oxidation Ponds	135	Used for Horticulture purpose and supplied to the needy industries and excess discharged through drainage canal.	Consent to operate obtained upto 30.11.2016. Renewal of consent submitted on 12.01.2017 to PPCC
	Lawspet, Puducherry	Sewage Farm, Lawspet, Puducherry	STP — I, UASB 2006	Operational	2.5 MLD	2.5 MLD	UASB			- do -
	Lawspet, Puducherry	Sewage Farm, Lawspet, Puducherry	SBR	Operational	17 MLD	15 MLD	SBR (Sequential Batch Reactor)			- do -
2.	Dubrayapet, Puducherry	Dubrayapet, Puducherry	STP — II, UASB 2006	Operational	2.5 MLD	2.5 MLD	UASB		Used for Horticulture purpose and supplied to the needy industries and excess discharged through drainage canal.	Consent to operate obtained upto 30.11.2016. Renewal of consent submitted on 12.01.2017 to PPCC
	Dubrayapet, Puducherry	Dubrayapet, Puducherry	SBR	Operational	17 MLD		SBR (Sequential Batch Reactor)			Consent to Establish obtained and consent to operate application submitted to PPCC on 19.04.2017
3.	Reddiarpalyam, Puducherry	Kanaganeri, Reddiarpalayam, Puducherry	STP-III, SBR	Under construction	17 MLD		SBR (Sequential Batch Reactor)		--	Consent to Establish obtained vide No.4617/PPCC/NOC/ON JE/2012/568 dt 19.06.2012.

Annexure – XII

Water Quality data of Seawater for the Year – 2018
(Compliance Status W.r.t SW – II Criteria (Bathing, Contact Water Sports and Commercial Fishing) Notified Under E (P) Rules, 1986)

Station code	Monitoring location	State	Observed Values					
			Minimum Dissolved Oxygen	pH Range Min-Max		Maximum BOD (mg-l)	Maximum Fecal Coliform (MPN-100ML)	Maximum Turbidity-NTU
SW – II criteria for Designated Best Use			> 4.0 mg/ l	6.5 – 8.5		< 3.0 mg/l	100 MPN/ 100 ml	30 NTU
2267	Creek At Dando Mollo, Velsao, Mamugao	Goa	4.2	6.5	8.5	**4.6**	**13000**	26.5
4013	Tiracol Beach	Goa	5.2	6.8	8.1	2.9	**350**	**66.8**
4014	Miramar Beach	Goa	5.8	7	8.2	3	**790**	**32.7**
4015	Calangute Beach	Goa	6.2	7.2	8.1	2.9	**350**	**57.9**
4016	Morjim Beach	Goa	5.6	6.6	8.2	2.9	**170**	**44**
4017	Mobor Beach	Goa	5.9	7.1	8.3	**4.7**	**350**	28.4
4019	Galgibag Beach	Goa	6.1	6.7	7.9	**3.3**	**540**	**77.2**
4020	Colva Beach	Goa	5	6.5	8.3	**4.1**	**3500**	15.8
4021	Vagator Beach	Goa	5.8	7.4	8.1	**4**	**790**	**54.4**
4022	Velsao Beach	Goa	5.9	7.4	8.2	**6**	**1100**	30
4018	Baina Beach	Goa	5.3	7.1	8.1	**7.2**	**1700**	**44.6**
2080	Masma Khadi- Olpad- Saras Road	Gujarat	5.2	7.3	8.4	**3.1**	**148**	**39**
2081	Amlakhadi Creek At Pungam.	Gujarat	**0**	7.3	8.1	**44**	**130**	10.8
3196	Vandkhadi At Village Umarwada, Ta Ankleshwar,	Gujarat	**0**	**6.4**	8.1	**191**	**260**	**32.2**
1316	Bassein creek at VasaiFort , Village- Bassein, Taluka- Vasai, District-Thane.	Maharashtra	**3.2**	6.9	8.1	**18**	**920**	3
1317	Thane creek at Elephanta Island, Village- Elephanta Island , Taluka-Mumbai, District- Mumbai.	Maharashtra	**3.2**	6.6	7.8	**20**	**1600**	4.2
1318	Mahim creek at Mahim Bay, Village- Mahim, Taluka- Mumbai, District-Mumbai.	Maharashtra	**3.8**	6.8	7.7	**54**	**1600**	1.9
2165	Sea water at Gateway of India, Village- Colaba, Taluka- Colaba, District-	Maharashtra	**3.5**	6.6	7.8	**20**	**1600**	2.9

Station code	Monitoring location	State	Observed Values					
			Minimum Dissolved Oxygen	pH Range Min-Max		Maximum BOD (mg-l)	Maximum Fecal Coliform (MPN-100ML)	Maximum Turbidity-NTU
SW – II criteria for Designated Best Use			**> 4.0 mg/ l**	**6.5 – 8.5**		**< 3.0 mg/l**	**100 MPN/ 100 ml**	**30 NTU**
	Mumbai.							
2166	Sea water at Charni road choupathy, Village- Girgaon, Taluka- Mumbai, District- Mumbai.	Maharashtra	**3.3**	6.9	8.2	**18**	**1600**	2.2
2167	Sea water at Worli seaface, Village- Worli, Taluka- Worli, District- Mumbai.	Maharashtra	**3**	6.7	8	**20**	**1600**	2.2
2169	Sea water at Versova beach, Village- Versova, Taluka- Andheri, District- Mumbai.	Maharashtra	**3**	7	8	**120**	**1600**	5.5
2184	Vashi creek at Airoli bridge, Village- Airoli,Talu	Maharashtra	**3.4**	6.6	7.9	**20**	**350**	2.6
2185	Vashi creek at Vashi bridge, Village- Vashi,Taluka- Thane,District- Thane.	Maharashtra	**3.5**	6.9	8.3	**18**	**280**	4.7
2791	Ulhas Creek At Reti Bunder At D/S Of Kalyan- Bhiwandi Bridge, Village- Kalyan, Taluka- Kalyan, District- Thane.	Maharashtra	**1.2**	6.7	8.1	**22**	**130**	2.8
2792	Ulhas Creek At Mumbra Reti Bunder, Village- Mumbra,Taluka- Thane, District- Thane.	Maharashtra	**3.3**	6.7	8	**18**	**220**	2.8
2793	Thane Creek At Kalwa Road Bridge, Village- Kalwa,Taluka- Thane,District- Thane.	Maharashtra	**2.9**	6.7	7.9	**22**	**350**	1.9
2794	Ulhas Creek At Kolshet Reti Bunder, Village- Kolshet, Taluka- Thane, District- Thane.	Maharashtra	**2.6**	6.7	8	**18**	**540**	5.3
2795	Ulhas Creek At Gaimukh At Nagla Bunder On Ghod Bunder Road, Village- Nagla,Taluka- Thane,District- Thane.	Maharashtra	**2.8**	6.8	8	**22**	**920**	4.8
2796	Ulhas Creek At Versova Bridge, Village- Versova	Maharashtra	**3.3**	6.9	8	**18**	**920**	5.2
2797	Bhayander Creek At D/S Of Railway Bridge At Jasal	Maharashtra	**3.1**	6.9	8	**17**	**240**	2.6
2798	Kharekuran Murbe Creek , Village- Kharekuran, Talu	Maharashtra	**1.9**	6.3	8.1	**30**	**350**	2.9
2799	Dandi Creek, Village. Dandi, Taluka. Palghar, Dist	Maharashtra	**1**	7	7.9	**62**	**540**	3.2
2800	Sarwali Creek, Village- Sarwali, Taluka- Palghar,	Maharashtra	**3.4**	7.2	8.3	**15**	**350**	2.8
2801	Savta Creek, Village- Savta, Taluka- Dahanu, District- Thane.	Maharashtra	**3.6**	6.9	8	**20**	**350**	3.6
2802	Dahanu Creek At Dahanu Fort, Village- Danugaon,	Maharashtra	**3.2**	7.1	7.9	**20**	**110**	4.3
2803	Panvel Creek At Kopra Bridge, Village- Kopra,Taluka- Panvel, District-	Maharashtra	3	6.4	8.2	**18**	**170**	1.2

Station code	Monitoring location	State	Observed Values					
			Minimum Dissolved Oxygen	pH Range Min-Max		Maximum BOD (mg-l)	Maximum Fecal Coliform (MPN-100ML)	Maximum Turbidity-NTU
SW – II criteria for Designated Best Use			**> 4.0 mg/ l**	**6.5 – 8.5**		**< 3.0 mg/l**	**100 MPN/ 100 ml**	**30 NTU**
	Raigad.							
2804	Karambavane Creek At Chiplun, Village- Karambavane, Taluka- Chiplun, District- Ratnagiri.	Maharashtra	6	6.6	7.8	2.8	26	0.7
2805	Arnala Sea, Village- Arnala, Taluka- Vasai, District- Thane.	Maharashtra	**3.1**	7.2	8.1	**22**	**1600**	3.6
2806	Uttan Sea At Bhayander, Village- Uttan, Taluka- Bhayander, District- Thane.	Maharashtra	**3**	6.9	8	**22**	**1600**	2.1
2807	Navapur Sea, Village- Navapur, Taluka- Palghar, District- Thane.	Maharashtra	**1**	6.9	8.6	**110**	**540**	4.6
2808	Sea Water At Nariman Point, Village- Colaba, Taluka- Colaba, District- Mumbai.	Maharashtra	**3.1**	6.9	7.9	**20**	**1600**	2.2
2809	Sea Water At Malabar Hill, Village- Walkeshwar,Tal	Maharashtra	**3**	6.5	8.1	**20**	**1600**	2.2
2810	Sea Water At Haji Ali, Village- Worli, Taluka- Worli, District- Mumbai.	Maharashtra	**2.9**	6.8	7.9	**20**	**1600**	2.8
2811	Sea Water At Shivaji Park (Dadar Choupathy), Village- Dadar, Taluka- Dadar, District- Mumbai.	Maharashtra	**3.4**	6.9	7.7	**20**	**920**	1.9
2812	Sea Water At Juhu Beach, Village- Juhugaon, Taluka- Santacruz,	Maharashtra	**3.1**	6.7	8.1	**20**	**1600**	7
2813	Sea Water At Ganapathipule, Village- Ganapatipule, Taluka- Ratnagiri, District- Ratnagiri.	Maharashtra	5.4	6.5	8	**4.2**	94	0.9
2814	Sea Water At Bhagwati Bunder, Ratnagiri	Maharashtra	5	6.8	8	**4.2**	49	0.8
2815	Madvi Sea Water At Ratnagiri Near Jodhale Maruti	Maharashtra	5	6.8	8.1	**4.2**	79	0.8
2439	Puri	Odisha	5.8	7.6	8.4	2.6	**330**	23
2440	Paradeep	Odisha	6.2	7.4	8.2	2.8	**700**	**41**
2441	Gopalpur	Odisha	5.8	7.5	8.2	2.3	230	14
3961	Atharabanki Creek	Odisha	**2.6**	6.7	7.7	**7.9**	**16000**	24

Annexure – XIII

Water Quality Data of Seawater for the Year – 2019
(Compliance Status w.r.t SW – II Criteria (Bathing, Contact Water Sports and Commercial Fishing) notified Under E (P) Rules, 1986)

Station code	Monitoring location	State	Observed Values					
			Minimum Dissolved Oxygen	pH (Min-Max)		Maximum BOD (mg-l)	Maximum Fecal Coliform (MPN-100ML)	Maximum Turbidity-NTU
SW – II criteria for Designated Best Use			**> 4.0 mg/ l**	**6.5 – 8.5**		**< 3.0 mg/l**	**100 MPN/ 100 ml**	**30 NTU**
4349	SEA WATER , BAY OF BENGAL, AFTER CONFLUENCE OF MARINE OUTFALL OF M/S. AUROBINDO PHARMA LTD. PYDIBHEEMAVARAM (V) RANASTHALAM (M)	ANDHRA PRADESH	4.2	7.3	8.3	**4**	11	12.2
4352	SEA WAER BAY OF BENGAL, AFTER CONFLUENCE OF MARINE OUTFALL OF M/S MATRIX LABORATORIES LTD THAMMAYYAPALEM (V) PUSAPATIREGA (M)	ANDHRA PRADESH	4.5	6.8	8.1	**6**	11	8.4
4361	SEA WATER BAY BENGAL, UPPADA BEACH ROAD, KAKINADA	ANDHRA PRADESH	5.4	6.8	8.2	2.8	20	22.4
4362	SEA WATER, BAY OF BENGAL NEAR DEEP WATER PORT, KAKINADA (1KM AWAY FROM JETTY)	ANDHRA PRADESH	**0.7**	6.7	8.1	**3.6**	15	14.2
4363	SEA WATER BAY OF BENGAL NEAR KUMBHABHISHEKAM TEMPALE, KAKINADA	ANDHRA PRADESH	**1**	6.9	8.1	**4.6**	15	5.3
4371	SEA WATER, BAY OF BENGAL AFTER CONFLUENCE OF RIVER VASHISTA GODAVARI AT CHINNAMAINAVANILANKA (V), NARSAPUR (M)	ANDHRA PRADESH	4.5	6.4	8.2	2.6	9	14.9
4378	SEA WATER, BAY OF BENGAL, MANGINAPUDI BEACH, MACHILIPATNAM	ANDHRA PRADESH	4.3	7.6	7.9	**3**	4	0

Station code	Monitoring location	State	Observed Values					
			Minimum Dissolved Oxygen	pH (Min-Max)		Maximum BOD (mg-l)	Maximum Fecal Coliform (MPN-100ML)	Maximum Turbidity-NTU
SW – II criteria for Designated Best Use			> 4.0 mg/ l	6.5 – 8.5		< 3.0 mg/l	100 MPN/ 100 ml	30 NTU
4383	SEA WATER BAY OF BENGAL, FISHING HARBOUR, NIZAMPATNAM	ANDHRA PRADESH	**3.9**	7.4	8.5	**24**	4	0.3
4385	SEA WATER, BAY OF BENGAL, KOTHAPATNAM BEACH	ANDHRA PRADESH	4.6	7	8.2	**3**	10	0.1
4386	SEA WATER, BAY OF BENGAL, VADAREVU BEACH, CHIRALA	ANDHRA PRADESH	4.3	7.1	8.3	**3.8**	4	0.1
4387	SEA WATER, BAY OF BENGAL, KRISHNAPATNAM PORT	ANDHRA PRADESH	**3.8**	7.2	8.1	**3.6**	4	0.4
2267	CREEK AT DANDO MOLLO, VELSAO, MAMUGAO	GOA	5	**6.4**	8.3	2.8	**2600**	5.6
4013	TIRACOL BEACH	GOA	5.9	6.6	8	2.3	**1300**	**49.1**
4014	MIRAMAR BEACH	GOA	5.8	**6.3**	8.3	1.8	**1300**	**37.1**
4015	CALANGUTE BEACH	GOA	5.8	**6.1**	8.2	0.7	**490**	**39.4**
4016	MORJIM BEACH	GOA	5.8	7.2	8.2	2.7	**1300**	27.7
4017	MOBOR BEACH	GOA	5.5	7.3	8.2	2.5	**1100**	16.6
4018	BAINA BEACH	GOA	4.2	7.3	8.2	**3.3**	**540**	8.7
4019	GALGIBAG BEACH	GOA	5.2	**6.4**	8.1	2.9	**5400**	17.2
4020	COLVA BEACH	GOA	5.3	7.4	8.2	3.3	**1100**	15.9
4021	VAGATOR BEACH	GOA	5.6	**6.2**	8.1	2.8	**790**	**31.2**
4022	VELSAO BEACH	GOA	5.9	7.4	8.1	**4.6**	**790**	7.5
2080	MASMA KHADI- OLPAD- SARAS ROAD	GUJARAT	5	7.3	7.9	2	33	47
2081	AMLAKHADI CREEK AT PUNGAM.	GUJARAT	**0**	7	8.1	**31**	79	24.3
3196	VANDKHADI AT VILLAGE UMARWADA, TA ANKLESHWAR, BHARUCH	GUJARAT	**4.2**	6.7	7.7	**23**	**170**	**45.4**

Station code	Monitoring location	State	Observed Values					
			Minimum Dissolved Oxygen	pH (Min-Max)		Maximum BOD (mg-l)	Maximum Fecal Coliform (MPN-100ML)	Maximum Turbidity-NTU
SW – II criteria for Designated Best Use			> 4.0 mg/ l	6.5 – 8.5		< 3.0 mg/l	100 MPN/ 100 ml	30 NTU
1316	BASSEIN CREEK AT VASAIFORT AT BASSEIN , VASAI,THANE	MAHARASHTRA	**3.7**	6.9	7.8	**14**	70	13.4
1317	THANE CREEK AT ELEPHANTA ISLAND, ELEPHANTA, MUMBAI	MAHARASHTRA	**3**	6.8	7.6	**20**	**920**	12.4
1318	MAHIM CREEK AT MAHIM BAY, MAHIM, MUMBAI	MAHARASHTRA	**3**	6.8	7.8	**50**	**920**	8.2
2165	SEA WATER AT GATEWAY OF INDIA,COLABA, MUMBAI	MAHARASHTRA	**3.2**	6.9	7.7	**16**	**1600**	11.7
2166	SEA WATER AT CHARNI ROAD CHOUPATHY, GIRGAON, MUMBAI	MAHARASHTRA	**3.2**	7	7.9	**17**	**1600**	10.7
2167	SEA WATER AT WORLI SEA FACE, WORLI, MUMBAI	MAHARASHTRA	**3.2**	6.9	7.9	**16**	**920**	8.7
2169	SEA WATER AT VERSOVA BEACH, VERSOVA, ANDHERI, MUMBAI	MAHARASHTRA	**3.8**	**6.4**	8.2	**14**	**1600**	9.2
2184	VASHI CREEK AT AIROLI BRIDGE,AIROLI, THANE	MAHARASHTRA	**3.6**	6.8	7.8	**13**	**110**	**32.9**
2185	VASHI CREEK AT VASHI BRIDGE, VASHI,THANE	MAHARASHTRA	**3.2**	6.6	7.8	**20**	**110**	**30.1**
2791	ULHAS CREEK AT RETI BUNDER, D/S OF KALYAN-BHIWANDI BRIDGE, KALYAN,KALYAN, THANE	MAHARASHTRA	**3.5**	6.5	7.8	**15**	**110**	8.8
2792	ULHAS CREEK AT MUMBRA RETI BUNDER, VILLAGE MUMBRA, THANE	MAHARASHTRA	**3.3**	**6.3**	8	**16**	**170**	**33.9**
2793	THANE CREEK AT KALWA ROAD BRIDGE, KALWA, THANE	MAHARASHTRA	**3.3**	6.5	8	**15**	84	10.9
2794	ULHAS CREEK AT KOLSHET RETI BUNDER, KOLSHET, THANE	MAHARASHTRA	**3.5**	6.5	8.1	**14**	70	10.2
2795	ULHAS CREEK AT GAIMUKH AT NAGLA BUNDER ON GHOD BUNDER ROAD, NAGLA, THANE	MAHARASHTRA	**3.6**	6.6	7.9	**12**	**920**	12.4

Station code	Monitoring location	State	Observed Values					
			Minimum Dissolved Oxygen	pH (Min-Max)		Maximum BOD (mg-l)	Maximum Fecal Coliform (MPN-100ML)	Maximum Turbidity-NTU
SW – II criteria for Designated Best Use			> 4.0 mg/ l	6.5 – 8.5		< 3.0 mg/l	100 MPN/ 100 ml	30 NTU
2796	ULHAS CREEK AT VERSOVA BRIDGE, VERSOVA, VASAI, THANE	MAHARASHTRA	**3.9**	6.6	7.9	**13**	79	23.3
2797	BHAYANDER CREEK AT D/S OF RAILWAY BRIDGE, JASAL PARK CHOUPATHY, NAVGHAR, BHAYANDER, THANE	MAHARASHTRA	**3.6**	6.8	8.1	**14**	**280**	20
2798	KHAREKURAN MURBE CREEK, KHAREKURAN, PALGHAR, THANE	MAHARASHTRA	**3.9**	**6.3**	7.9	**60**	**130**	12.6
2799	DANDI CREEK, DANDI, PALGHAR, THANE	MAHARASHTRA	**3.1**	6.5	8	**55**	**350**	11.4
2800	SARAWALI CREEK, SARAWALI, PALGHAR, THANE	MAHARASHTRA	**3.4**	6.5	8.6	**14**	**110**	12.4
2801	SAVTA CREEK, SAVTA, DAHANU, THANE	MAHARASHTRA	**3.4**	7.1	8.1	**16**	70	28.4
2802	DAHANU CREEK AT DAHANU FORT, DANUGAON, DAHANU, THANE	MAHARASHTRA	**3.8**	7.3	7.9	**15**	94	**30.6**
2803	PANVEL CREEK AT KOPRA BRIDGE, KOPRA, PANVEL, RAIGAD	MAHARASHTRA	4.5	6.5	8.7	**11**	79	3.1
2804	KARAMBAVANE CREEK AT CHIPLUN, KARAMBAVANE, RATNAGIRI	MAHARASHTRA	**3.4**	6.8	7.9	**14**	**920**	15.7
2805	ARNALA SEA, ARNALA, VASAI, THANE	MAHARASHTRA	**3.2**	6.7	8	**17**	**920**	8.7
2806	UTTAN SEA, UTTAN, BHAYANDER, THANE	MAHARASHTRA	**3**	6.9	7.8	**50**	**920**	8.2
2807	NAVAPURA SEA, NAVAPUR, PALGHAR, THANE	MAHARASHTRA	**3**	6.5	8.4	**470**	79	**56.2**
2808	SEA WATER AT NARIMAN POINT, COLABA, MUMBAI	MAHARASHTRA	**3.1**	6.6	7.7	**20**	**17000**	12.7
2809	SEA WATER AT MALABAR HILL, WALKESHWAR, MUMBAI	MAHARASHTRA	**3.4**	6.7	7.6	**15**	**1600**	10.2
2810	SEA WATER AT HAJI ALI, WORLI, MUMBAI	MAHARASHTRA	**3.4**	6.9	7.7	**570**	**1600**	**335**
2811	SEA WATER AT SHIVAJI PARK, DADAR CHOUPATHY,DADAR, MUMBAI	MAHARASHTRA	**3.1**	6.8	7.7	**45**	**1600**	8.4

Station code	Monitoring location	State	Observed Values					
			Minimum Dissolved Oxygen	pH (Min-Max)		Maximum BOD (mg-l)	Maximum Fecal Coliform (MPN-100ML)	Maximum Turbidity-NTU
SW – II criteria for Designated Best Use			**> 4.0 mg/ l**	**6.5 – 8.5**		**< 3.0 mg/l**	**100 MPN/ 100 ml**	**30 NTU**
2812	SEA WATER AT JUHU BEACH, JUHUGAON, SANTACRUZ, MUMBAI	MAHARASHTRA	**3.8**	6.2	8.2	**14**	**1600**	8.4
2813	SEA WATER AT GANAPATIPULE, RATNAGIRI, RATNAGIRI	MAHARASHTRA	4.2	6.8	7.9	**11**	**920**	10.6
2814	SEA WATER AT BHAGWATI BUNDER NEAR ULTRA TECH CEMENT JETTY, MIRKARWADA, RATNAGIRI, RATNAGIRI	MAHARASHTRA	4	7.1	7.9	**14**	**84**	8.5
2815	MADVI SEA WATER NEAR JODHALE MARUTI TEMPLE, MADVIGAON, RATNAGIRI, RATNAGIRI	MAHARASHTRA	4.3	6.9	8.1	**12**	**920**	18.8
2439	PURI	ODISHA	6	7.3	8.2	1.6	**350**	**59**
2440	PARADEEP	ODISHA	5.8	7.1	8.2	1.4	2	22
2441	GOPALPUR	ODISHA	6.5	7.3	8.2	2.5	**330**	23
3961	ATHARABANKI CREEK	ODISHA	4.4	6.8	7.9	**3.8**	**5400**	**50**