



2013-14

**CENTRAL POLLUTION CONTROL BOARD
ZONAL OFFICE (SOUTH)
BENGALURU - 560010**

PROJECT HEAD : I POLLUTION ASSESSMENT (SURVEY AND MONITORING)

Scheme 3: Monitoring of inter-state river water quality in Southern Zone.

CPCB South Zonal Office monitoring 8 Nos monitoring location in South Zone. The monitoring locations are

<u>S. No</u>	<u>River Name</u>	<u>Monitoring Location Name</u>
1	River Cauvery	Sathyakala Bridge
2	River Thenpennai(Dhakshina Pinagini River)	Mugalur Bridge
3	River Thungabhadra	Hochechali
4	River Krishna	Deodurga
5	River Pennar	Hindupur– (No water for many year monitoring stopped)
6	River Godavari	Baser
7	River Bhima	Ganagapur
8	River Manjira	Janawada

The monitoring location map is enclosed in Annexure

As per CPCB head office letter No: A- 19014/41/2006-mon/6674 dt: 18.11.2008. Rivers which are either small/seasonal or not causing any interstate dispute may be monitored only once a year dispute river location may be monitored quarterly.

River Thenpennai (Dhakshina Pinakini River) – Mugalur Bridge monitored quarterly other river monitoring points are monitored once in a year. Parameters and results are enclosed in annexure II

Result and Discussion:

As per river quality criteria, Bio-Chemical Oxygen Demand (BOD) should be 3mg/lit or less for drinking water after conventional treatment.

In south zone interstate river quality, all monitoring points were meeting limit, except, Thenpennai River at Mugalur Bridge (Karnataka State), Most of the time, BOD values are exceeding of the limit of 3mg/lit and phosphate and Nitrogen are also very high in this point. The reason is Bangalore city area is 941 Sq.Km. and urban population is 1,00,00,00 One Crore. Bangalore generates about 1459 MLD of domestic waste water. 50% domestic waste water treated remaining 50% sewage water goes untreated source Bangalore BWSSB.

This may be attributed to the mixing of untreated sewage into river. There is a need of complete 100% treatment of city sewage in Bangalore so as to reduce the pollution load in Riverine ecosystem.

In Bangalore Sewage treated/untreated discharged into lakes. These lakes water over flows finally together and become Dhashna Pinakini (or Thenpennai river) Surplus water from Belandur lake over flows into varthur lake (Bangalore). Varthur Lake over flows River (Thenpennai) goes to sokkaranapalli, mugalur and reaches to kelvar pallidam Tamil Nadu 15 K.M. from hosur, from Varthur to Kalvarapalli dam around 35 K.M. to 40 K.M distance. In this 35 K.M distance the surplus water used for irrigation and cloth washing kelvar pallidam water used for Hosur city drinking water, industrial purpose and dam over flows goes down stream irrigation and infiltration water used for drinking water.

Recommendation:

Bangalore city sewage water 100% should be treated and phosphate should removed and meet the treated sewage standard.

Annexure

Inter State Boundary Water Quality Monitoring Analysis Results for the year 2013 - 2014

	Monitoring date	06.05.2013	26.08.2013, 07.05.2013 26.11.2013, 17.03.2014			23.09.2013		23.09.2013	23.09.2013	04.12.2013	23.10.2013
S.No	Parameters	River Cauvery at Satyakala Bridge	River Thenpennai at Mugalur Bridge			River Thungabhadra at Hochechalli		River Krishna at Deodurga	River Bhima at Ganagapur	River Godavari at Baser	River Manjira Janwada
1	pH	7.5	7.4	6.9	7.1	7.6	7.8	7.9	7.4	7.8	7.5
2	Electrical Conductivity µs/cm	450	987	999	1565	785	800	780	890	500	517
3	Total Dissolved Solids mg/lit	311	536	670	1080	487	464	460	623	340	322
4	Total Dissolved Oxygen (D.O) mg/lit	—	4	4.5	—	—	9	7.8	8	6.9	7
5	BOD mg/l	1	17	17	27	13	BDL	BDL	4	BDL	2
6	COD mg/l	6.3	60	54	60.6	55	12	9	34	15	16
7	Alkalinity	190.5	120	275	300.9	256	150	135	190	201	206
8	Total Hardness	70.8	222	228	270.8	205	150	190	250	170	203
9	Calcium Hardness	22.2	73	80	96	72	48	60	80	60	55
10	Magnesium Hardness	3.7	10	9.2	7.5	6.0	9.8	9.8	12	4.9	16
11	Chloride	56.9	127	96	150.2	89	50	58	75	15	31
12	Sulphate	10.9	—	30	27.8	30	149	110	200	40	32
13	Phosphate	—	1.0	—	—	—	0.03	BDL	BDL	BDL	BDL

14	Sodium	23.2	89	110	118	99	85	90	96	36	40
15	Potassium	1.7	18	5	21.8	4	10	2	2	2	6
16	Boron	—	—	—	2.65	—	0.09	BDL	BDL	BDL	0.1
17	NO ₃ - N	BDL	0.58	0.09	BDL	2.2	0.9	0.02	2	0.5	0.14
18	NO ₂ - N	0.5	25.4	0.4	0.17	0.2	BDL	BDL	BDL	BDL	0.08
19	NH ₃ - N	BDL		11	2.65	2.2	0.5	BDL	0.9	0.5	1.1
20	T.Coliform	7.22 x 10 ⁴		4.93 x 10 ⁵		122880 CFU/100ml		104960 CFU/100ml	93440 CFU100ml	36000 CFU/100ml	
21	F.Coliform	5.84 x 10 ⁴		1.04 x 10 ⁵		960 CFU/100ml		960 CFU/100ml	320 CFU/100ml	2000 CFU/100ml	