

# Central Pollution Control Board

## Water Quality Monitoring Programme

### CHECK LIST / INSPECTION REPORT

1. Name & address of the State Board : Karnataka State Pollution Control Board  
(i) Head Office "Parisar Bhavan" 1<sup>st</sup> to 5<sup>th</sup> Floor, # 49, Church Street, Bangalore -560 001.Karnataka India  
  
(ii) Address of the Regional Laboratory :# 01,Auto Nagar Industrial Area, Kanabargi, Office Belgaum-590016.
2. Name & Designation of Contact Person : 1. Sri. Jagadeesh. I. H, Environmental Officer.  
2.Dr. Goudappa.M.Patil, Deputy Scientific Officer
3. Number of Stations allocated GEMS  MINARS  GAP   
(Please provide details in enclosed Annexure (A))
4. Sampling: (i) Name & Designation of persons involved (i) Smt. Suganda. B. Kuri. Dy. Env. Officer  
(ii) Sri. Deepak Chinchori. Field Asst.  
(iii)Sri. Rajesh Neelanur.  
(iv).....  
  
(ii) Sample container used : **White Polyethelene Can**  
  
(i) Sampling Accessories Availability : (tick as )  
Water Sampler  Kit Bag  DO Kit   
DO Meter  Multianalyser  Ice Box   
Current Meter  Measuring tape   
Float Balls  Stickers/Adhesive tape/Labels   
  
(ii) Samples collected from :  
(a) **bank**  
(b) **Sub-Surface at one feet Depth**  
  
(iii) Bacteriological sample :  
Glass Borosil bottles 300 ml capacity  
Approx sample volume collected 150 ml  
Top covered with **paper**

Contd. ....

5. Field Measurement :
- (i) Velocity of Flow : Not measured
- (ii) Temperature : **Mercury Thermometer -10 to 110 deg. cent/others**
- (iii) Dissolved Oxygen : **Winkler Method**  
Preliminary fixation : **In Field**  
Measurements Analysis : **In Lab**
6. Sample Preservation :
- a) Physico Chemical Analysis Samples : (i) Ice Preserved :   
(ii) Chemically Preserved :
- b) Bacteriological Samples : Ice preserved :
7. Samples Transportation :
8. Post-Sampling Storage : Refrigerated till completion of Analysis
9. Physico Chemical Analysis : Please provide details in Annexure (B)
- (i) Source of Distilled Water : **Self Prepared** in the laboratory  
Type of Distillation : **Metal**  
Conductivity : 40  $\mu$ hos / cm
- (ii) Analytical Balance : **Single Pan**  
Performance : Satisfactory  
Readability : 0.001 mg Satisfactory
10. Bacteriological Examination :
- a) Technique : **Multiple Tube**
- b) Media Used for : Presumptive Test -----  
Total Coliform MacConkey Broth  
Faecal Coliform EC Broth  
Total Plate Count -----  
Faecal Streptococci -----
- c) Analytical Facilities Available: (Tick as  $\checkmark$ )
- Inoculation Chamber :  $\checkmark$  Laminar Flow  $\checkmark$   
UV Tube  $\checkmark$  Cotton Wool  $\checkmark$   
Autoclave  $\checkmark$  Incubator /Water Bath  $\checkmark$   
Inoculation Loop  $\checkmark$  Burner / Sprit Lamp  $\checkmark$

Utensils for media preparation ✓

LPG gas  Colony counter

Rectify spirit ✓

d) Sterilization adopted for (Tick as )

Sampling bottle ✓ Pipettes ✓

Inoculation loop ✓ Culture Media ✓

Dilution Water ✓ Culture Tube ✓

Culture Plates ✓ with Media

With Media

e) Coliform Test (MPN test)

(i) Presumptive test performed  **Yes**

(ii) Confirmative test performed  **Yes**

(a) No. of Dilution adopted .....

(b) No. of Culture tube taken .....  
for each dilution

(c) Culture tubes 37°C for faecal coliform  
Incubated at 37°C for total coliform

f) Precautions taken during inoculation  **Yes**

11. Analytical Result

a)  **Manual**

b) Data Reports  **Proper**

c) Data Submission  **Regular**

d) Any Report prepared for .....  
Internal use (provide one copy each)

12. In addition to compulsory parameters specify special parameters for each station and suggest change in frequency in Annexure 'C' wherever felt necessary.

13. Enclose a map of the river showing location of sampling points and effluent outfalls (industrial and domestic) with distances.

Contd...

14. At all the station (except impact station) ensure homogeneity of the river at the sampling location by checking conductivity (or chloride) over the cross section (avoiding stagnant water near the bank).  
(provided information in Annexure 'D')

15. Name of stations inspected.

S. No.	Station Code	Name of Station
1.	1187	Malaprabha River at D/s of Khanapur

**Central Pollution Control Board**  
**Location Details of Monitoring Stations**  
**State Board Karnataka Central / **Regional Lab****

Name of Stations GEMS / MINARS / GAP	Station Code	Latitude	Longitude	25 km Radius catchment area use	Water use classification Drinking water/ Bathing/ wild- Life/ Irrigation	Approx. distance from Lab to Sampling Station	Approx. approach time to Sampling Station from Lab	Mode of Transportation/ approach Bycycle/ Auto/ Car/ Bus/ Train	Significance of station/ Impact/ Baseline/ Trend (Please Ref. Footnote)
Malaprprabha River D/s of Khanapur.	1187	E-074.51386	N-15.63398	Human Habitat and Agriculture	Drinking/Bathing/Irrigation	30 Kms	1 Hr	Car	Impact

**Footnote :**

**Baseline :-** Determine the quality of water in its natural state i.e. these stations are located at a place where the water quality is not influenced by human activities.

**Impact :-** Assess the impact of activities by man upon the quality of the water & its suitability for required uses e.g. water intake point, bathing ghats etc.

**Trend :-** Keep under observation the sources and pathway of specified pollutants. These stations are used to assess the water quality and its trend over a period of time. (for trend stations homogeneity of the river is to be ensured at sampling location by checking conductivity across the cross-section).

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RECOMMENDATIONS FOR CHANGE OF FREQUENCY AND SPECIAL PARAMETERS

Name of Station	Station Code	Specific parameters recommended if necessary (like – heavy metals (specific metals) pesticides, cyanide, phenol etc.	Justification for recommendation of specific parameters	Change of frequency recommended		Justification for proposed change in frequency
				Present	Proposed	

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PHYSICO – CHEMICAL ANALYSIS

Sl. No.	Parameter	Method (Tick the method used as $\checkmark$ )	Instrument (make / model)	Comments on analytical procedure
1.	pH	i) Colorimetric ii) pH strips iii) pH meter $\checkmark$	Systronics $\mu$ pH System 361, 2013	
2.	Conductivity	i) Conductivity $\checkmark$ ii) Any other	Systronics, 304	
3.	Turbidity	i) NTU $\checkmark$ ii) JTU	Systronics 2012, 132.	
4.	Calcium	i) Titrimetric $\checkmark$ ii) Flame photometric		
5.	Sulphate	i) Gravimetric ii) Turbidimetric $\checkmark$		
6.	Sodium	i) Flame Emission Photometric $\checkmark$ ii) A.A.S.		
7.	Phosphates	i) ANSA ii) Vanadomolybdo Phosphoric Acid iii) Stannous Chloride $\checkmark$ iv) Ascorbic Acid v) Automated Ascorbic Acid Reduction		
8.	Alkalinity	i) Titrimetric $\checkmark$ ii) Electrometric		
9.	Chlorides	i) Argentometric $\checkmark$ ii) Mercuric Nitrate iii) Phenometric iv) Automated Ferricyanide		

10.	Boron	i) Curcumin ✓ ii) Carmine	
11.	B.O.D.	i) Dilution Method ✓ ii) Other	Temp. of 27 °C <b>incubator</b> / water bath ..... °C
12.	C.O.D.	i) Open reflux titrimetric ✓ ii) Closed reflux titrimetric iii) Close reflux colorimetric	Reflux Time 2.00 hr.
13.	Ammonia	i) Nesslerization (Direct) ii) Nesslerization (Distillation) iii) Distillation following titration ✓ iv) Ammonia selective electrode v) Phenate method vi) Other	
14.	Nitrate	i) DPC UV Spectrophotometer ✓ ii) Electrode iii) Cadmium reduction iv) Chromotropic Acid v) Davarda's alloy Reduction	
15.	Nitrite	i) NEDA Dihydrochloride ✓ ii) Other	
16.	T.K.N.	i) Macro-kjeldahl ✓ ii) Semi-micro-kjeldahl	
17.	T.D.S.	i) Dried at 180 °C	
18.	F.D.S.	i) Ignited at 550 °C	

Give details of parameters being analysed (other than mentioned above) Sodium, Potassium, Sulphate Dissolved Solids, Fixed Dissolved Solids, Iron and Heavy metals  
Time in days for completion of analysis after sample collection three days.



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COMMENTS AND FOLLOW - UP

The following observations have been made during visit at Karnataka State Pollution Control Board Regional Laboratory from Belgaum.

- (i) The sampling stations located appropriately : 

<b>Yes</b>
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- (ii) If shifting of any sampling location is required provide following details (Attach separate sheet if space is not sufficient) : 

<b>No</b>
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- (iii) Name of non-operational stations and reason thereof : Not Applicable
- (iv) Deficiencies in Monitoring Programme (sampling, transportation & analysis) observed (Attach sheet if space is not sufficient) and changes suggested (to be communicated to State Board with a copy to CPCB Head Office along with the duly-filled check list)

**Observations:**

- No ice was carried in the ice box for sample preservation.
- Sampling was carried out at the bank of the river

**Recommendations:**

- The ice shall be carried in ice box for sample preservation as per norms
- The possibilities shall be explored to carry out the sampling at mid-stream of the river.
- The sampling shall be done opposite to the direction of flow.

Date : 17.12.2015

Signature .....

Name Anjana Kumari V

Place: Bengaluru

Designation Scientist C

**Photos taken during inspection**



**Sampling carried out Malaprabha river, Kanapur (1187)**





**MAP SHOWING NWMP STATION AT MALAPRABHA RIVER, KANAPUR (1187)**