

# 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 Office : Karnataka State Pollution Control Board, Regional Office, Belgaum-2, (Chikkodi Centre) Hanuman Nivas, # 3224/3, RS.No. 409/A, B. K. College Road, Hirekudi Village, Chikkodi, Belgaum-District.
2. Name & Designation of Contact Person : 1. Smt. Rajshree. J. Kulli, Dy Env. 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. Rajashree. J. Kulli Deputy. Env. Officer  
(ii) Sri. Vijayakumar. Shenduri Field Asst.  
(iii) Kumari. Priyanaka C. Umare Field Asst.
  - (ii) Sample container used : **White Polyethelene Can** /Coloured Polyethelene/Glass
  - (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) Mid stream / **bank**
    - (b) Surface / Sub-Surface at one feet Depth
  - (iii) Bacteriological sample :  
Glass bottles 300 ml capacity  
Approx sample volume collected 150 ml  
Top covered with foil / **paper** / not covered

Contd. ....

5. Field Measurement :
- (i) Velocity of Flow : Current Meter/ **Float Method**/Chemical Method
- (ii) Temperature : a) Mercury Thermometer -10 to 110 deg. cent/others  
b) Least Count of Thermometer ..... Deg. Cent.
- (iii) Dissolved Oxygen : Dissolved Oxygen Meter / **Winkler Method**  
Preliminary fixation : **In Field** / In Lab  
Measurements Analysis : In Field / **In Lab**
6. Sample Preservation :
- a) Physico Chemical : (i) Ice Preserved :   
Analysis Samples (ii) Chemically Preserved :   
If yes, Chemical used : NA
- b) Bacteriological : Ice preserved :   
Samples
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** / Purchased from Market  
Type of Distillation : **Metal** / Glass / Any other Unit  
Conductivity : 5  $\mu$ mhos / cm
- (ii) Analytical Balance : **Single Pan** / Double Pan  
Digital / Weight Loading  
Performance : Satisfactory / Unsatisfactory  
Readability : 0.001 mg Satisfactory /  
Unsatisfactory
10. Bacteriological Examination :
- a) Technique : **Multiple Tube** / Membrane Filter
- b) Media Used for : Presumptive Test -----  
Total Coliform Mackonkey 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  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 / No

(ii) Confirmative test performed  Yes / No

(a) No. of Dilution adopted : 3

(b) No. of Culture tube taken : 5

for each dilution

(c) Culture tubes 37°C for faecal coliform

Incubated at 37°C for total coliform

f) Precautions taken during inoculation  Yes / No

11. Analytical Result

a)  Manual / Computerized

b) Data Reports  Proper / Improper

c) Data Submission  Regular / Irregular

d) Any Report prepared for: No

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.

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.	1889	Krishna River Ankali Bridge
2.	1182	Krishna River Ugar Barrage
3.	1163	Ghataprabha River Water supply Jackwell to Gokak City
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**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)
Krishna River Ankali Bridge	1889	E-074.679774	N-16.5579	Human Habitat and Agriculture	Drinking/Bathing/Irrigation	80 Kms	2 Hrs	Car	Impact
Krishna River Ugar Barrage	1182	E-074.82125	N-16.64107	M/s Ugar Sugar, Human Habitat & Agriculture	Do	95 Kms	2.1/2 Hrs	Car	Impact
Ghatatrabha River Gokak city Water supply Jackwell	1163	E-074.81567	N-16.17448	M/s. Ghataprabha SSK, Gokak Textiles & Roquette Sidhi. Human Habitat & Agriculture	Do	80	2 Hrs	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).

**Central Pollution Control Board**PHYSICO – CHEMICAL ANALYSIS

<b>Sl. No.</b>	<b>Parameter</b>	<b>Method (Tick the method used as <math>\checkmark</math>)</b>	<b>Instrument (make / model)</b>	<b>Comments on analytical procedure</b>
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 : Sodium, Potassium, Sulphate Dissolved Solids,  
 analysed(other than mentioned above) Fixed Dissolved Solids, Iron and Heavy metals  
 Time in days for completion of analysis : Three days.  
 after sample collection

**Central Pollution Control Board**

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	
Krishna River Ankali Bridge	1889	Pesticides	Agricultural fields on either side of the river banks.	--	--	--
Krishna River Ugar Barrage	1182			--	--	--
Ghapatrabha River Gokak city Water supply Jackwell	1163			--	--	--

**Central Pollution Control Board**

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 : Yes / No  
appropriately

(ii) If shifting of any sampling location : Yes / No  
is required provide following details  
(Attach separate sheet if space is not sufficient)

Sl. No.	Name and code no. of old location	Name of alternate new location	Reasons for shifting
1.	Krishna River Ugar Barrage Athani Tq., 1182	Krishna River, Kudachi Bridge, Raibhag Tq.,	Present stn. Is U/s of M/s Ugar Sugar works and the <b>proposed Alternate location is D/s of M/s. Ugar Sugar Works Ltd.,</b>

(iii) Name of non-operational stations : NA  
and reason thereof

(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)

<ul style="list-style-type: none"><li>➤ No Ice is carried in the icebox.</li><li>➤ Sample not collected from the centre.</li><li>➤ Location of Station 1182 Ugar barrage on Krishna river not appropriate may be shifted to D/S of M/S Ugar Sugar Works Ltd.</li></ul>	<ul style="list-style-type: none"><li>➤ No flow meter.</li><li>➤ Analytical Instruments not calibrated since procurement.</li></ul>
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Date :

Signature :

Place :

Name :

Designation :