

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" 1st to 5th 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. Asst. Env. Officer
(ii) Sri. Deepak Chinchori. Field Asst.
(iii)Sri Munaf
(iv).....

(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 : Yes/No
Analysis Samples (ii) Chemically Preserved : Yes/No
If yes, Chemical used -----
- b) Bacteriological : Ice preserved : Yes/No
Samples
7. Samples Transportation : **In Ice Box** / Without Ice Box
8. Post-Sampling Storage : Refrigerated till completion of Analysis Yes/No
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 μ 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
Feacal Coliform EC Broth
Total Plate Count -----
Feacal 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 adopted3.....

(b) No. of Culture tube taken5.....
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
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.	1187	Malaprabha River at D/s of Khanapur
2.	1164	Malaprabha River at Hubli Dharwad Water Abstraction point at Saundatti
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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)
Malaprpraha 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
Malaprabha River at Hubli Dharwad Water Abstraction Point at Saundatti	1164	E-075.10532	N-15.58856	Do	Do	70 Kms	5 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).

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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 μ 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 incubator / 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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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	
Malaprprabha River D/s of Khanapur.	1187	Pesticides	Extensive agricultural activities on both sides of river banks.	--	--	--

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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 : 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
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(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">➤ Analytical Instruments not calibrated since procurement.➤ No Ice is carried in the icebox.➤ Sample not collected from the centre.	<ul style="list-style-type: none">➤ No flow meter.
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Date : Signature :

Name :

Place : Designation :