



**Central Pollution Control Board
South Zone Office, Bengaluru-560079**

Water Quality Monitoring Programme

CHECK LIST / INSPECTION REPORT

1. Name & address of the State Board: Karnataka State Pollution Control Board
436/D, Opp. To Royal Inn Hotel
KRS Road, Metagalli, Mysore – 570 016
- (i) Head Office: Karnataka State Pollution Control Board
Parisara Bhavan
5th Floor, 49 Church Street
Bengaluru – 560 001
- (ii) Address of the Central/Regional:
Office Laboratory Karnataka State Pollution Control Board
436/D, Opp. To Royal Inn Hotel
KRS Road, Metagalli, Mysore – 570 016
2. Name & Designation of Contact: Dr. P. Niranjana
Person Regional Officer
Mob. No.: 9448350868
Fax.: 0821 2519411 &
email ID.: mys1@kspcb.gov.in
3. Number of Stations allocated GEMS NWMP GAP
(Please provide details in enclosed Annexure (A))
4. Sampling: (i) Name & Designation of Persons involved (i) Sh. Siddaiah, Field Assistant
(ii) Sh. Lakshmana, Field Assistant
(iii) Ms. Bindu, Analyst
(iv) Ms. Vinita, Analyst
- (ii) Sample container used: White Polyethylene/Coloured Polyethylene/
Glass

- (i) Sampling Accessories Availability : (tick as \checkmark)
- 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 Depth

(iii) Bacteriological sample :

Glass bottles 125 ml capacity
 Approx sample volume collected 75 ml
 Top covered with foil / paper / not covered

5. Field Measurement :
- (i) Velocity of Flow : Current Meter/Float Method/Chemical Method
- (ii) Temperature : a) Mercury Thermometer: 0-50 deg. cent/others
 b) Least Count of Thermometer: 1/1 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 H₂SO₄, HNO₃, HCL
- 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 : 0.001-500 g Satisfactory /
Unsatisfactory

10. Bacteriological Examination :

a) Technique : Multiple Tube / Membrane Filter

b) Media Used for: Presumptive Test -----
Total Coliform -----
Faecal Coliform -----
Total Plate Count -----
Faecal Streptococci -----

c) Analytical Facilities Available: (Tick as \surd)

Inoculation Chamber : Laminar Flow

UV Tube Cotton Wool

Autoclave Incubator Water Bath

Inoculation Loop Burner / Sprit Lamp

Utensils for media preparation

LPG gas Colony counter

Rectify spirit

d) Sterilization adopted for (Tick as \surd)

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: upto 10^{-3}

(b) No. of Culture tube taken
for each dilution: 5 tube

(c) Culture tubes 44.5°C for faecal Coliform
Incubated at 37°C for total Coliform

f) Precautions taken during inoculation Yes / No

Manual / Computerized

11. Analytical Result
- Data Reports
 - Data Submission
 - Any Report prepared for Internal use (provide one copy each): No
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. | 3576 | Cauvery river (water intake point for Mysore city) |
| 2. | 3582 | Hebbal Lake |
| 3. | 3583 | Kukkarahalli Lake |
| 4. | 3584 | Dalavai Lake |
| 5. | 3585 | Yennehole Lake |
| 6. | 3586 | Lingambudhi Lake |
| 7. | 3587 | Shettykere Lake |
| 8. | 3588 | Karanji Lake |

Central Pollution Control Board
Location Details of Monitoring Stations

State Board Karnataka, Central / Regional Lab Mysore regional Office, KSPCB.

| 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 Bicycle/ Auto/ Car/ Bus/ Train | Significance of station/ Impact/ Baseline/ Trend (Please Ref. Footnote) |
|---|--------------|----------------------------|----------------------------|--|---|---|--|--|---|
| Cauvery River/MINARS | 3576 | N=12 ⁰ 21'03.6" | E=76 ⁰ 37'38.3" | Water supply intake point of Mysore city | Drinking water | 18 Km | 20 Min. | Car | Impact |
| Hebbal Lake/NW MP | 3582 | N=12 ⁰ 21'38.4" | E=76 ⁰ 36'35.6" | ----- | Irrigation | 2 Km | 4 Min. | Car | Baseline |
| Kukkaraha lli Lake/NW MP | 3583 | N=12 ⁰ 21'25.4" | E=76 ⁰ 36'39.7" | ----- | Water is not used for any purpose. It is a tourist place | 7.6 Km | 18 Min. | Car | Baseline |
| Dalavai Lake/NW MP | 3584 | N=12 ⁰ 14'59.9" | E=76 ⁰ 39'30.8" | ----- | Irrigation | 15 Km | 32 Min. | Car | Impact |
| Yennehole Lake/NW MP | 3585 | N=12 ⁰ 12'31.9" | E=76 ⁰ 38'22.8" | ----- | Irrigation | 15.7 Km | 28 min. (Via ring road) | Car | Impact |
| Lingambudhi Lake/NW MP | 3587 | N=12 ⁰ 16'5.5" | E=76 ⁰ 36'45.4" | ----- | Irrigation | 17.3 Km | 27 min. (Via ring road) | Car | Impact |

| | | | | | | | | | |
|-----------------------|------|---------------|---------------|-------|--|---------|-------------------------|-----|----------|
| Shettykere Lake/NW MP | 3587 | N=12°14'18.1" | E=76°39'39.5" | ----- | Irrigation | 16.9 Km | 35 min. | Car | Impact |
| Karanji Lake/NW MP | 3588 | N=12°18'6.3" | E=76°40'18.8" | ----- | Water is not used for any purpose. It is a tourist place | 12 Km | 22 min. (via ring road) | Car | Baseline |

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 BoardPHYSICO – CHEMICAL ANALYSIS

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

| | | | |
|-----|---------|---|---|
| 10. | Boron | i) Curcumin ii) Carmine | |
| 11. | B.O.D. | i) Dilution Method ii) Other – Winklers method | Temp. of incubator/ water bath 27 °C for 3 days |
| 12. | C.O.D. | i) Open reflux ii) Closed reflux titrimetric iii) Close reflux colorimetric | Reflux Time 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) UV Spectrophotometer ii) Electrode iii) Cadmium reduction iv) Chromotropic Acid v) Davarda's alloy Reduction | |
| 15. | Nitrite | i) NED Dihydrochloride ii) Other | NA |
| 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): **Fe, Cu, Zn, Ni, Pb, Mn, Cd, Cr and Heavy metals.**

Time in days for completion of analysis after sample collection: **15 days.**

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 | |
| | | | | | | |

Central Pollution Control Board

COMMENTS AND FOLLOW - UP

The following observations have been made during visit at **Karnataka** State Pollution Control Board, **Mysore Regional Office Laboratory** from **CPCB, South Zonal Office Bengaluru**.

- (i) The sampling stations located : appropriately
- (ii) If shifting of any sampling location : 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 |
|---------|-----------------------------------|--------------------------------|----------------------|
| | | | |

- (iii) Name of non-operational stations: **Nil, all the stations are in operations** 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)
1. Samplings were done near the river bank and samples were taken on surface of river.
 2. Ice box was used for preserving the sample, but without ice in the container.
 3. Samplings were transported either by Car or Bus from sampling point to Laboratory for 90 km distance.
 4. For complete analysis of parameters, laboratory is taking 15 days time.
 5. The KSPCB regional Office Laboratory of KSPCB Mysore, is receiving 90 samples per month from different districts of Karnataka, which is causing delay in analysis and work load on analysts this may also leads to analytical error.

Signature of Inspection Team:

I.A. Kadar
Sr. Technician

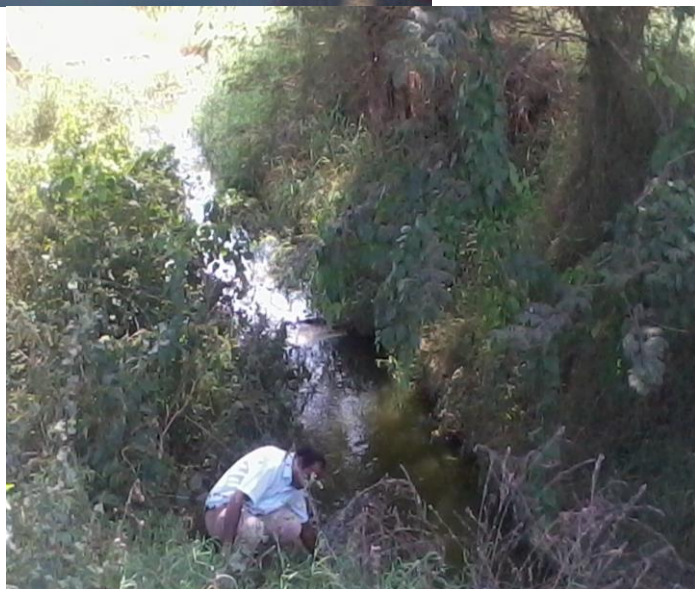
Poornima B. M.
Sc. B

Photo graphs showing NWMP stations located in Mysore district



**Fig No. 1: Sampling at Hebbal Lake (SC – 3582) 3583),
used for**

**Fig No. 2: Sampling at Kukkarahalli Lake (SC –
this lake is a tourist place and this water is not
any purpose.**



**Fig No. 3: Sampling at Karanji Lake (SC- 3588)
the
this lake is a tourist place and this water is not
being
used for any purpose.**

**Fig No. 4: Sampling at Dalavai Lake (SC- 3584),
treated sewage joins this lake and the water is
used for irrigation purpose**



Fig No. 5: Sampling at Shettykere Lake (SC-3587)

This water is being used for irrigation purpose is

Fig No. 6: Sampling at Yennehole Lake (SC-

3585) the treated sewage joins this lake and the water being used for irrigation purpose



Fig No. 7: Sampling at Lingambudhi Lake (SC-3586), this lake has been severely polluted by immersing Ganesha idol dur