

**Website: [www.kwa.kerala.gov.in](http://www.kwa.kerala.gov.in)**  
**Mobile/ Whatsapp: +919495998258**

**Tel. 0471-2738300**  
**Consumer Helpline Number**  
**1916 [24X7] [Toll Free]**



## **KERALA WATER AUTHORITY**

**Jalabhavan**  
**Thiruvananthapuram – 695033**  
**Kerala - India**

**KWA-JB/315/2024-AE(TC)**

**Dated: 04-02-2024**

### **CIRCULAR**

**Sub- Empanelment of KWA Officers as faculty for the inhouse training of KWA.**

**Ref-Lr No. 38470/AE2 (TC)/2022/KWA Dated: 04.01.2023**

**Vide the ref cited above faculty member's application were invited . Those who are willing to be included may submit their willingness within 7 days to the under signed including the following details:**

**Name:**

**Designation:**

**Qualification:**

**Experience:**

**Field of expertise:**

**Enclosed-Ref letter**

**JOINT MD KWA**

# 'ജലം ജീവാമൃതം'

Mobile/ Whatsapp: +9194959 98258  
Website: <http://www.kwa.kerala.gov.in>



Tel: 0471 2738300  
Consumer Helpline Number  
**1916 [24X7] [Toll Free]**  
1916cckwa@gmail.com

## KERALA WATER AUTHORITY

Jalabhavan  
Thiruvananthapuram-695033  
Kerala

No. 38470/AE2 (TC)/2022/KWA

Dated: 04.01.2023

From

Chief Engineer (HRD&GL)

To

- 1.CE- SR, CR, NR, SEWERAGE & PPD/ FM&CAO
- 2.SE-PH/Sewerage Circle,.....
- 3.Director, SRI
4. EE HW/PH/WS/Project/Sewerage/QC Division.....

Sir/Madam,

Sub:- Trainers as faculty in KWA Training Centre Invitation Called for- Reg

ടെയിനിങ് സെന്റർ വഴി നടത്തിവരുന്ന പരിശീലന പരിപാടികളിലേക്ക് പുതിയ പരിശീലകരെ കണ്ടെത്തുവാനായി, പ്രസ്തുത സേവനം നിർവഹിക്കുവാൻ താല്പര്യമുള്ളവരിൽ നിന്നും (Online / Classroom / Both) അപേക്ഷകൾ ക്ഷണിക്കുന്നു. . ടെയിനിങ് സെന്റർ വഴി നടത്തിവരുന്ന പരിശീലന വിഷയങ്ങളുടെ പട്ടിക ഇതോടൊപ്പം ഉള്ളടക്കം ചെയ്തിരിക്കുന്നു.

പ്രസ്തുത വിഷയങ്ങളിൽ പരിശീലകരായി പ്രവർത്തിക്കുവാൻ താല്പര്യമുള്ളവർ; താൽപ്പര്യപ്പെടുന്ന വിഷയം/ വിഷയങ്ങൾ, തങ്ങളുടെ പേര്, തസ്തിക, ഓദ്യോഗിക വിലാസം, ഫോൺ നമ്പർ, ഇ മെയിൽ വിലാസം എന്നിവ, [eeetrainingkwa@gmail.com](mailto:eeetrainingkwa@gmail.com) എന്ന വിലാസത്തിൽ 20/01/2023-നു മുൻപായി നൽകണമെന്ന് അഭ്യർത്ഥിക്കുന്നു. താങ്കളുടെ കീഴിലുള്ള എല്ലാ കാര്യാലയങ്ങളിലും ഈ കത്ത് നൽകുകയും എല്ലാ ജീവനക്കാരുടെയും ശ്രദ്ധയിൽപ്പെടുത്തേണ്ടതുമാകുന്നു.

Yours faithfully,  
Saiju Purushothaman  
Deputy Chief Engineer(GL)  
(For Chief Engineer (HRD&GL))

Copy To

DBA , for publication in website.



## **Subjects**

### **General**

1. Introduction to KWA- Formation, Role in Public Health, Organisational Structure, Services, Staff Structure, Sources of Funds, Financial Position, Various Offices, etc
2. KWA Act, Regulation and Amendments-Overview
3. KWA Act, Regulation and Amendments- Provisions related to Water Supply
4. Introduction to CPHEEO Manual on Water Supply and Treatment, Components of Water Supply Scheme
5. Duties and Responsibilities of various staff at Induction Level .

### **Electro Mechanical Equipment**

1. Standards and statues of electrical systems, Safety Precautions, KSEI norms
2. Maintenance of electrical installations, Common defects in electrical equipment and trouble shooting
3. Transformer , Maintenance of sub station, basics of generation and transmission Preventive Mace. of substations and Equipment
4. Introduction to Pumps and Motors, their classification and functioning
5. Pump house Management, Preventive and Breakdown maintenance of Pumps, case studies
6. Design and Selection of Pumps
7. Factory Testing of Pumps and Motors
8. O&M of Electromechanical Equipment in Water Treatment Plant-Flash Mixers, Floculators, Chemical Mixing Pumps, Blowers, Wash water pumps , Chlorine pumps etc.

### **9. Estimation on Electrical and Mechanical Items.**

- a)Specification/ Short list of manufacturers/ Approved rate
- b) Estimation for Pumps and Motors (New and Repairs-)
- c) Estimation for Wiring and lighting,, Starters , Panel board and Switch gears .

### **10.Energy Conservation and savings**

- a) Introduction to Energy Conservation, Verification of Energy Meter reading issued by KSEBL and Maintaining Power Factor
- b). Energy Conservation methods in Pumps and Motors
- c). Energy Conservation methods in Panel boards and Transformers

### **WTP&WQ**

- 1.Introduction to Water Quality , Testing Water Quality and Drinking Water Specifications
- 2.Water Treatment Plant and the Components, Norms of Factories and Boilers - General Aspects



- 3.Principle of Coagulation, Jar Test , Chemical House and O&M of Clarifloculator
- 4.Filter operation and Control, Chlorination and Control
- 5.Hydraulic lay out and Design of WTP components
- 6.Recent Trends in Water Treatment .

## **Sewerage**

- 1.Introduction to CPHEEO Manual on Sewerage and PCB norms for disposal of treated sewage.
- 2.Components of Sewerage Scheme
- 3.KWA Act, Regulation and Amendments- Provisions related to Sewerage
- 4.Laying and Testing of Sewer Lines
- 5.O&M of Sewage Schemes
- 6.Recent Trends in Sewage Treatment

## **Metering, Revenue &NRW**

- 1.KWA Act, Regulation and Amendments- Provisions related to Revenue.
- 2.Liquid flow measurements, flow meters, calibration, AMR
- 3.Types of Water Meters, Testing of Water Meters, Recording readings, Water Tariff & Billing- Impact on Revenue
- 4.Route ordering, Preparation of Route Maps-Maintaining Route Book-use of Palm Held Machine, Consumer Services related to Water Connection
5. NRW- Basic Concept, Components, Methods of Reducing NRW
- 6.Familiarisation of Leak Detection Equipment, Pipe and Valve Locators, Operational Features
- 7.Anti Water Theft Measures, RR Proceedings , Discussions, Case Studies
- 8.Field- Practical Training on Leak Detection Equipment, Pipe and Valve Locators .

## **Pipeline**

1. Various types of Pipes , Valves & Specials -Laying and testing
2. Various types of Pipes , Valves & Specials -Repair and maintenance
- 3.Plumbing Works- Classroom Session
- 4.Design of Pipelines using EPANET
- 5.Introduction to Pre-Delivery Inspection and Third Party Inspection, Methods of Sampling, Documentation
- 6.Testing of Stoneware and RCC Pipes
- 7.Pre-delivery Inspection of DI, MS and CI Pipes & Specials
- 8.Pre-delivery Inspection of PVC , HDPE and GI pipes & Specials



## **Estimation with DSR and Price**

- 1.Introduction to CPWD Specification, DAR,DSR
- 2.Introduction to KWA SoR &Arriving Rates, Method of measurement as per IS 1200
- 3.Preparation of Estimate with DSR &KWA SoR Part I
4. Preparation of Estimate with DSR &KWA SoR Part II
5. Introduction to PRICE Software
6. Estimation with PRICE

## **Measurement & Preparation of Bills**

1. Methods of Measurements
2. Recording Measurements & Bill preparation

## **Feasibility Study and Preparation of Project Report.**

1. Feasibility study- surveys and investigations-Field Activities-Types of Surveying- Source Sustainability Studies- Water Quality Management-Demand assessment- Geotechnical Investigations-Preparation of Lay out Maps-Functional Design & Design criteria-General Principles of pipe network analysis
2. Preparation of Project Reports-Introduction-Pre Investment Planning-Identification of Project need of project Report-Stages in the Preparation of Project Reports-Identification Report- Planning Cycle-DPR Components-Contents of PER –Contents of DER- Requirements of Good Project Report.

## **Training on Total Station**

1. General Introduction to total Station, Centering and Levelling the instrument, Input commands
2. Practical Session-Survey of Training centre& Guest House area
3. Practical Session-Downloading data from Total Station, editing in computer
4. Practical Session -Preparation of Map &report using Softwares.

## **Purchase Rules and Arranging Works**

- 1.Procurement as per Store Purchase Manual and GeM
2. Arranging Works ,AS, FS, TS, Delegation of Powers, Tenders and Contracts, Single Cover Bidding System
- 2.Double Cover Bidding System

## **Material Accounting and Management at Division and Section Stores**

Receipt and Issue of Materials , Accounting Documents- GRS,BIN Card, Gate Pass, MRN,MASTN , IoA, PSL etc, Handing over and Taking charge of Materials



## **Concrete Technology and Construction supervision Managing Distribution System**

### **Training on various softwares**

MARCH, AQUALOOM, PASK,O&M,Etapp etc

### **e-ABACUS**

#### ***e-Tendering***

### **Vigilance awareness**

Vigilance Procedure, Govt. Servants conduct rules, Disciplinary Proceedings .

### **Manual of Office Procedures**

Overview of MOP, Maintenance of Registers, Preserving of files, Noting, Drafting Etc

### **Kerala Service Rules**

1. Overview of Kerala Service Rules Part I – General Conditions, Types of Leave, Calculation of Pay Fixation and Joining Time, etc
- 2.. Overview of Kerala Service Rules Part II- Travelling Allowance- Calculation of TA for various Grades pf Officers and Different kinds of journey
3. Overview of Kerala Service Rules Part III-Pension- Procedures-Classification- Calculation of Qualifying Service, Interruptions in service, Amount of pension, DCRG, etc.

### **Overview of Kerala Financial Code and Kerala Treasury Code in**

#### **Overview of PWD Manual-**

##### **.PW A code and D code**

#### **Preparation of Monthly Accounts**

- 1.General principle of Accounts, Works & Fixed Asset Accounting
- 2.Trial Balance, Bank Reconciliation
- 3.Bill Audit
4. Accounting with Tally

### **Digital Document Filing System (DDFS)**

**In addition to the above subjects faculties are also invited as trainers for the following topics for sewerageand PPD.**

#### **1.Watersupplysystem .**

- a Design water supply network system using CAD, EPACAD and EPANET
- b. Analysis and design of gravity and pumping lines under various conditions usingEPANET



- c. Demand forecast for water supply systems
- d. Analysis and design of water supply distribution system using EPANET
- e. Preparation of drawings for water supply components showing hydraulic features
- f. Design of various components of water treatment Plants (WTPs) using spreadsheets.

## **2 Sewerage system design.**

- a. Conversion of DGPS survey maps into digital network system using CAD, EPACAD and EPASWMM 5.1
- b. Demand forecast for sewerage systems
- c. Social survey procedure sewerage system at field and using GIS
- d. Analysis and design of sewage network system using EPASWMM 5.1/other software
- e. Preparation of drawings for water supply components showing hydraulic features
- Surveyors,
- f. Design of various components of sewage treatment plants (STPs) using spreadsheets.

## **3 Structural design.**

- a. Structural design of water tanks and other water retaining structures
- b. Structural design of WTP components like aerator, channels, flash mixer, baffled flocculator, conventional clarifier, sludge blanket clarifier with plate settler, rapid sand filters, chemical house, clear water reservoir etc.
- c. Structural design of STP components like collection well, channels, oil and grease trap, equalisation tank, conventional clarifier, sludge blanket clarifier with plate settler, pressure filters, chemical house, clear water reservoir etc.
- d. Structural design of anchor/thrust block for pipelines
- e. Structural design of pump house/office buildings with multi-story frames
- f. Seismic design of structures as per Indian Standard Code of Practice

