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# Water Balance Auditing and Non-Revenue Water Reduction Training Course

7 – 11 November 2027
Manama

# Water Balance Auditing and Non-Revenue Water Reduction Training Course

**Ref:** 2815_107955 **Date:** 7 – 11 November 2027 **Location:** Manama **Fees:** 4900 GBP

Water Balance Auditing and Non-Revenue Water Reduction is a 1-week training course for water utility finance, billing, metering and network loss managers, producing a Non-Revenue Water Reduction Business Case. Every cubic metre that enters supply but never reaches a bill weakens tariff recovery, capital plans and public trust, so utilities now need loss figures that finance and operations both accept. Jupiter Prime Training delivers this course for managers who turn loss estimates into funded action.

## Why Water Balance Auditing and Non-Revenue Water Reduction Matters Now

Three pressures meet in this subject. Scarce and costly bulk supply makes every leaked or unbilled volume a direct cost. Lenders ask for audited loss figures before funding renewal. A sound audit ranks interventions by recovered revenue; a weak one funds symptoms. The course rests on the standard top-down water balance, bottom-up night flow analysis and the economic level of leakage concept.

## Who Gains Most from Water Balance Auditing and Non-Revenue Water Reduction

- Finance staff responsible for valuing water losses and funding reduction plans
- Billing and customer account leads accountable for unbilled and misbilled consumption
- Metering specialists who manage meter testing, sizing and replacement cycles
- Network loss and leakage controllers who run zone monitoring and repair crews
- Planning officers who prepare capital requests for network and meter investment

Utilities that send finance, billing and network staff together gain most, since the balance closes only when all three agree.

## Water Balance Auditing and Non-Revenue Water Reduction Capabilities

Participants trace each cubic metre from source meter to bill and price every gap.

- Build an annual water balance from production, billed and estimated volumes — the audit signed off by finance
- Separate apparent losses from real losses with stated confidence limits — the choice between metering and leakage spend
- Calculate the cost of each loss component at retail and production rates — the tariff and budget committee
- Assess meter under-registration by size, age and flow profile — the meter replacement schedule
- Design district metered area monitoring with night flow targets — the network operations manager
- Communicate a ranked set of interventions with payback and recovered volume — the board and lenders

## Key Water Balance Auditing and Non-Revenue Water Reduction Terms

- Non-revenue water — the difference between system input volume and billed authorised consumption.
- Apparent losses — volumes consumed but not correctly billed through meter error, data faults or unauthorised use.
- Real losses — physical water escaping from mains, service connections and storage overflows before reaching the customer.
- District metered area — a hydraulically isolated network zone with metered inflows, used to measure and target leakage.
- Minimum night flow — the lowest inflow to a zone from which background and burst leakage are estimated.
- Economic level of leakage — the point where the cost of further leakage reduction equals the value of the water saved.

## Water Balance Auditing and Non-Revenue Water Reduction Day by Day

### Day 1: Loss Pressures and the Water Balance

- System Input Volume Measurement — Confidence in Production Meter Readings
- Top-Down Water Balance Table — Annual Loss Position for the Utility
- Authorised Consumption Categories — Treatment of Unbilled Public Uses
- Data Validation and Confidence Grading — Which Figures the Audit Can Trust
- Loss Performance Indicators per Connection — Comparing Zones of Different Size

### Day 2: Apparent Losses and Meter Accuracy

- Customer Meter Under-Registration Testing — Size and Age Replacement Priorities
- Meter Sizing Against Flow Profiles — Low-Flow Revenue Capture
- Billing Data Handling Error Review — Estimated Reads and Account Gaps
- Unauthorised Consumption Detection — Inspection Targeting by Zone
- Apparent Loss Valuation at Retail Tariff — Revenue at Stake per Component

## Day 3: Real Losses and District Metering

- District Metered Area Design and Boundary Testing — Zone Size and Valve Plans
- Minimum Night Flow Analysis — Background Versus Burst Leakage Split
- Pressure Management Zones — Leak Frequency and Flow Reduction Trade-Offs
- Active Leakage Control and Repair Time — Crew Deployment Choices
- Real Loss Valuation at Production Cost — Treatment and Pumping Savings

## Day 4: Loss Economics and Investment Choices

- Economic Level of Leakage Curve — Where Further Spend Stops Paying
- Intervention Cost and Recovered Volume Ranking — Order of Investment
- Meter Replacement Payback Modelling — Batch Versus Reactive Renewal
- Mains Renewal Versus Repair Comparison — Whole-Life Cost per Kilometre
- Sensitivity Testing on Tariff and Production Cost — Robustness of Each Option

## Day 5: Practising the Non-Revenue Water Reduction Business Case

- Audited Water Balance for a Case Utility — Baseline Loss Position
- Zone Loss Diagnosis from Night Flow Records — Target Areas for Action
- Component Valuation and Intervention Ranking — Funding Request Content
- Monitoring Indicators and Reporting Cadence — Evidence of Recovered Volume
- Non-Revenue Water Reduction Business Case — Board Approval Submission

## Applying Water Balance Auditing and Non-Revenue Water Reduction After the Course

- Rebuild the latest annual water balance with confidence grades and share the loss split with finance and network leads.
- Run a night flow review on two district metered areas and price the recoverable volume.

## Water Balance Auditing and Non-Revenue Water Reduction Questions FAQ

### What is water balance auditing and non-revenue water reduction, and why does it matter now?

It is the practice of accounting for every cubic metre supplied and cutting the share never billed. It matters now because supply costs rise and funders want audited loss figures.

### Which roles gain most from water balance auditing and non-revenue water reduction?

Finance, billing, metering and network loss managers gain most. Each holds part of the balance, and together you agree one loss position.

## How does water balance auditing and non-revenue water reduction differ from a revenue protection course?

It covers physical leakage as well as billing losses. A revenue protection course centres on theft and unbilled accounts; this course balances the whole network and ranks investment across both loss types.

## What do you bring back from water balance auditing and non-revenue water reduction?

You bring back a costed business case. It holds an audited balance, valued losses, ranked interventions and recovery indicators.

## Water Balance Auditing and Non-Revenue Water Reduction: The Way Forward

The Non-Revenue Water Reduction Business Case first informs which zones and meter groups receive funding in the next budget cycle. Finance and network leads use it to agree loss targets, repair budgets and meter batches. After its first year, revisit the unit cost of water and the economic level of leakage.