

# Water Conservation & Water Demand Management

Course Brochure M310 (March 2017)

**Reduce Water Losses,  
Achieve No-Drop Status  
Maintain Water Quality  
Create Employment**

## Course Description

This course provides Water Service Institutions with the knowledge, skills and on-going support to:

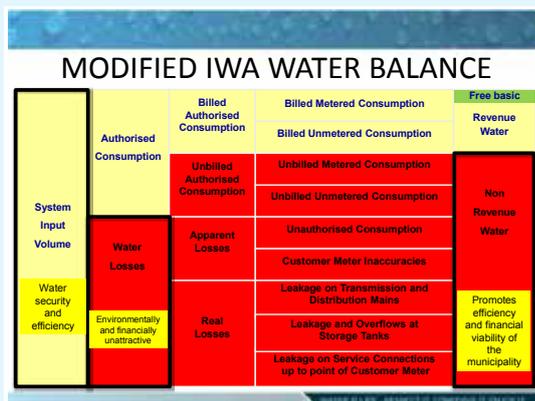
- Achieve a reduction in real water losses by applying water balances and related intervention methods
- Achieve and then maintain “No-Drop” Status through partnership
- Maintain the water quality within reticulation system by applying accepted reticulation system repair and maintenance methods
- Developing sustainable skills and job creation opportunities by accredited training

The course is provided in three phases. Each phase has been developed to suit the needs of a specific functional group within the full water conservation water demand management (WCWDM) team. Details of the three phases of delivery are provided overleaf.

## Course Content

### 1. Theory

- Chapter 1: Water conservation, water demand management (WCWDM) and legislative imperatives. The impact of Global Warming on the water resource.
- Chapter 2: The Water Balance, zones, data collection and water loss types and estimates.
- Chapter 3: Implement a water loss reduction programme, pressure management, leak detection, maintenance, customer relations
- Chapter 4: Keeping the reticulation system clean & the water safe
- Chapter 5: Implement WCWDM Programme, achieve & maintain No-Drop status
- Appendix 1: Annual flow of South African rivers
- Appendix 2: State of non-revenue water in South Africa
- Appendix 3: Legislative Imperatives
- Appendix 4: Components of water balance
- Appendix 5: Calculating Infrastructure leak index (ILI)
- Appendix 6: Leak detection & calculation
- Appendix 7: WCWDM Scorecard
- Appendix 8: Leakage management & Water Research Commission leak monitoring software tools.
- Appendix 9: Reconciliation strategy for a Local Municipality.
- Appendix 10: Water Balance example calculations
- Appendix 11: A practical 12 step procedure to implement a successful water loss intervention
- Appendix 12: Water Resource Augmentation including Rain Water Harvesting



## Course Accreditation Basis

The course is based on SAQA Unit Standards and the No-Drop incentive programme. Those taking part will be awarded NQF Credits as applicable.

- US254118 (M230): Apply water loss control: 8 credits
- US254122 (M223): Demonstrate knowledge of leak detain and leak detection programs: 4 credits
- US254095 (M277): Maintain water quality in a reticulation in a perfection systems: 5 credits
- The No-Drop assessment criteria

### 2. Formative Assessment Assignments

The assignments are designed to enable learners to assimilate theoretical learning

### 3. Develop Practical Skills

Coaching against six Standard Operating Procedures (SOPs) related to collecting and recording of meter readings and reducing inaccuracies, setting up water balances and determining losses, setting up management zones and applying water loss interventions including pressure management, leak detection methods, pipe cleaning and disinfection, after the leak has been repaired.

### 4. Practical implementation of WCWDM and latest No-Drop requirements

The theoretical learning is now practically implemented in a 12 Step-Procedure to reduce water loss, improve water quality, achieve No-Drop status and create employment.

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### Phase One: Information Sharing & Senior Management Buy in. The Essentials of WCWDM and Water Quality Control

Functional Group: Supply Chain: Including Portfolio Councilors, Technical And Financial Directors, Human Recourse Manager, Skills Development Facilitators and Supervisors

Course Contents: Those attending this course will be presented with an overview of the knowledge and skills topics listed overleaf as well as the skill to conduct overall assessments of own workplace against acceptable bench-marks.

Methods and Time: **One day** class based training plus workplace assignment.

Outcomes: Course participants will be able to:

- Assess own systems against industry standard bench-marks.
- Lead a WCWDM team to achieve the target outcomes of the course
- Support project success and to ensure Council approval of the WCWDM strategy and business plan and it's mainstreaming into the Integrated Development Plan (IDP)
- Develop WCWDM organograms and access, job creation opportunities for Council approval

### Phase Two: Technical Competence Theoretical Training

Functional Group: Technical Task Team: Technical Managers, Supervisors and Team Leaders

Course contents: The full course content related to the three Unit Standards and No-Drop criteria is detailed overleaf

Methods and Time:

The course will include a mix of theory and class assignments.

- Class: **Eight days** over two months.

### Phase Three: Site Coaching, Mentoring, Implementation & Assessment

Functional Group: Technical Task Team as per Phase Two

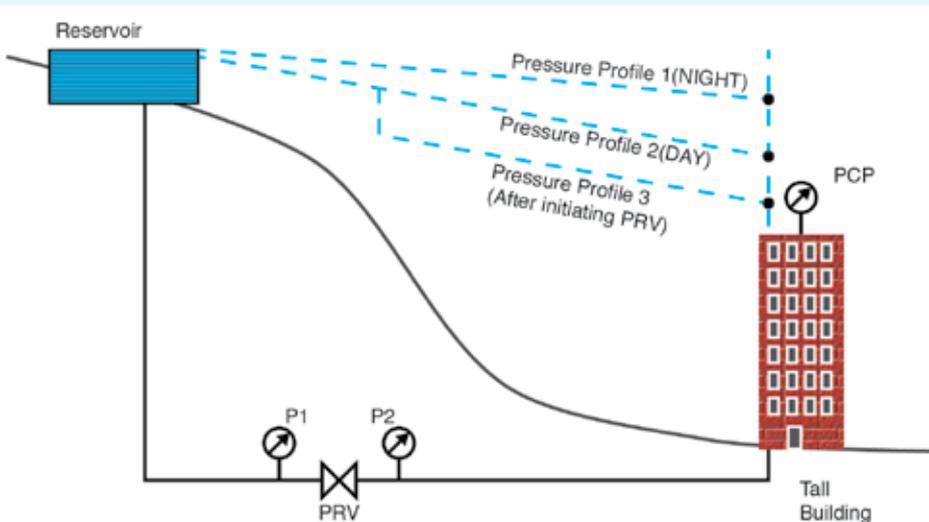
Course contents: The implementation of Unit Standards, WCWDM and No-Drop measures

Methods and Time:

- Class work: Nil: This is the practical implementation phase of the course, the required theoretical class work was included in Phase Two
- Develop practical skills: Depending on the extent of the site and the number of learners, **twelve days** on- site, spread over a three month period. Learners to be given coaching and mentoring on six Standard Operating Procedures and 12 step procedure described in course content on front page.
- Assessment: Approximately **two days** per site depending on extent of site and the number of learners

### Overall Outcomes of this programme

- Empower managers and supervisors to calculate and manage own water balances, assess own water losses, calculate Infrastructure Leak Indexes (ILI), asses these against best practice bench-marks and take correctional actions.
- Assess the financial, water supply and local economic development (LED) benefits of implementing WCWDM measures.
- Create sustainable employment opportunities
- Develop the knowledge and skills to manage and supervise staff to implement and maintain WCWDM measures and No-Drop compliance system to within acceptable bench-marks.
- Maintain quality in water reticulation system.
- Achieve a reduction in water demand and real water losses.
- Increase the supply of available water for domestic, commercial and industrial use by reducing water demand and water losses.



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