SUPERIOR FILTRATION

# CASE STUDY

## AGF: AUTONOMOUS GRAVITY SAND FILTER

## MECHANICAL RAPID GRAVITY SAND FILTER, POTABLE WATER TREATMENT PLANT, ALICE

**Client:** Amathole District Municipality
**Industry:** Potable Water
**Region:** Eastern Cape, South Africa
**Product:** AGF42S, 3 units, 97m³/h per unit @ 7m/h
**Installation Date:** 2000

### Challenge

- Amathole District Municipality operates a **7MLD** potable water treatment plant at Alice, a rural town in the Eastern Cape province in South Africa.
- During the design phase, process engineers were looking for polishing filters that would ensure compliance with potable water standards for Turbidity and TSS.
- They required:
  - easy installation
  - high efficiency
  - low maintenance costs
  - easy maintenance functions
  - zero electrical energy consumption
  - high reliability

### Application

- Final Filtration / **Mechanical Rapid Gravity Sand Filters** (polishing filters) at Potable Water Treatment Plant.

### Solution

- The inherent simplicity of the Autonomous Gravity Sand Filters (AGF) addressed constraints presented by the rural location and it easily met the requirements set by the design engineers.
- Easy Installation:
  - Minimum civil works on site.
  - Fabrication under tightly controlled factory conditions.
- High efficiency:
  - AGF filters cycle autonomously between filtration and backwash cycles resulting in regular, thorough cleaning of the filter bed.
- Low Maintenance Costs:
  - No peripheral equipment (backwash pumps, controllers, compressors) required.
  - Manpower limited to period oversight functions.
- Easy Maintenance:
  - Maintaining the integrity of the mechanical structure and periodic replacement of nozzles and sand.
- Zero Electrical Energy Consumption:
  - Gravity flow through the filters.
  - Complete Autonomous Function.
- High reliability:
  - No moving or rotating components.
  - No peripheral components.
- 3 x **AGF42S Mechanical Rapid Gravity Sand Filters** were installed, processing 97m³/h per unit at an average filtration velocity of 7m/h.

### Results

- Since commissioning in 2000 the AGF filters have consistently provided efficient filtration.
- Maintenance and operating costs have been kept to a minimum.
- The filters continue to produce filtrate that complies with the drinking water standard.



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