# **Specification Language: 95MTS MG21-1.25TC00 Manganese Greensand Filter**

## **Control Valve**

1. Each mineral tank will have one (1) 32 mm (1.25“), Canature WaterGroup 95 series, top mounted, plastic PPO (Noryl) body, motor driven control valve and will be of the piston/seal/spacer type.
2. All the valves will have an electronic slave controller and be interlinked with each other to the separate main controller.
	1. The interlinking cables will also deliver power to each valve.
3. Each control valve will have an integrated turbine meter.
4. Each control valve will indicate the unit address via an LCD display.
5. The control valve has two (2) programmable auxiliary output relays.
6. All valves will regenerate sequentially.
7. All valves will be NSF/ANSI 44 certified for materials and structural integrity requirements.
8. The control valve will be designed to work at a pressure from 137 – 862 kPa gauge (20 - 125 psig) and from temperatures of 1 °C (34 °F) to 43 °C (110 °F).
9. The control valve and electronics will have a warranty of five (5) years.

## **Media**

1. Each mineral tank will contain 762 mm (30”) bed depth of high quality, NSF approved Anthracite and Manganese Greensand media.
2. Each mineral tank will have graded and washed quartz support bed of 76 mm (3”) gravel above the bottom of the distribution system.

## **Mineral Tank**

1. All mineral tanks will be 533 mm (21”) in diameter and 1575 mm (62”) in height.
2. All mineral tanks will be NSF/ANSI 44 certified for Materials and Structural Integrity.
3. The liner material will be made of polyethylene and the outer winding will be made of a high-performance fibreglass and epoxy resin.
4. The maximum operating pressure will be 1034 kPa gauge (150 psig) with an operating temperature range of 1 °C – 49 °C (34 °F – 120 °F) with a maximum vacuum of 127 mm Hg (2.46 psi).
5. The system will contain three (3) mineral tanks.
6. The mineral tank will have a warranty of five (5) years.

## **Controller Programming**

1. The master controller is fully programmable electronic controller with adjustable cycles.
2. The master controller will have a color, graphical user interface with a 73mm (2.875”) screen.
3. The main page display will show:
	1. The total number of units.
	2. The time of day.
	3. Total system flow rate.
	4. Filter unit address.
	5. The status of each filter (ON-LINE, Standby or Backwash).
	6. The flow rate through each filter (if applicable).
	7. Time left in the backwash/regeneration cycle (if applicable).

## **Chemical Feed System**

1. There shall be a chemical solution feeder constructed of material suitable for handling potassium permanganate or sodium hypo-chlorite solutions.
2. There shall be a graduated polyethylene solution tank.
3. The chemical feed pump will require a 115V for its operation.
4. The chemical feed pump will operate in conjunction with the on - off operation of the raw water supply pump.

## **System Set Up and Operation**

1. The system is set up as a calendar clock system and will have its regeneration initiated via a system timer.
2. The maximum recommended operating pressure will be 139-689 kPa gauge (20-100 psig).
3. Only the main controller will be connected to an electrical outlet able to supply 120V at 60Hz.
4. Filtered water can be drawn continuously from each filter unit at flows of up to 12 USGPM (0.76 l/s). depending on the manganese concentration.
5. The backwash requirement for each filter is 25 USGPM (1.58 l/s).

## **System Part Number**

The filter will be a **95MTS MG21-1.25TC00** as manufactured by Canature WaterGroup.