CLAIMS

We claim:-

1. A method of water purification by improving the flow in a flock channel area of a high rate water treatment plant comprising of the following steps:-

allowing water to flow through a coagulation-flocculation process area to undergo the processes of coagulation with the help of a coagulant and flocculation with the help of a flocculation aid, and thereby forming a plurality of flocks within the water and in turn a mixture of water and flock;

detaining the mixture of water and flock in the coagulation-flocculation process area for a minimum of 15 minutes on average;

redirecting the mixture of water and flock to the start of a sedimentation process area;

introducing even and equidistantly positioned fins of varying heights, where said fins are positioned in ascending height across the outlet of the flock channel area and thereby distributing the water flow velocity evenly throughout the flock channel area;

steering the mixture of water and flock through the flock channel area and downwards through a passageway created by said fins;

allowing the mixture of water and flock to leave through the outlet of the flock channel area;

continually redirecting the mixture of water and the remaining flock upwards to a plate settler area for settling to be done leading to a supernatant liquid to emerge on top and thereby completing the sedimentation process;

enabling the supernatant liquid to move towards a filtration area for filtration process to occur;

wherein out of the supernatant liquid that comes out of the filtration process is purified water that can be disinfected separately and immediately for further use.

2. The method of water purification by improving the flow in the flock channel area of a high rate water treatment plant of Claim 1, wherein said fins are at most 85% of the height of the flock channel area.

3. The method of water purification by improving the flow in the flock channel area of a high rate water treatment plant of Claim 2, wherein said fins are at least 10% of the height of the flock channel area.

4. The method of water purification by improving the flow in the flock channel area of a high rate water treatment plant of Claim 3, wherein said fins are being inclined to an angle between 25 to 75 degrees.

5. The method of water purification by improving the flow in the flock channel area of a high rate water treatment plant of Claim 4, wherein said fins are made of stainless steel.

6. The method of water purification by improving the flow in the flock channel area of a high rate water treatment plant of Claim 5, wherein there are at least 3 of said fins positioned in the flock channel area.

7. The method of water purification by improving the flow in the flock channel area of a high rate water treatment plant of Claim 6, wherein said fins are configured to the flock channel wall by welding.

8. The method of water purification by improving the flow in the flock channel area of a high rate water treatment plant of Claim 6, wherein said fins are configured to the flock channel wall by tying using a rivet joint.

9. The method of water purification by improving the flow in the flock channel area of a high rate water treatment plant of Claim 6, wherein said fins are configured to the flock channel wall by adhesive bonding.

10. A system for deriving purified water efficiently through the improvement of the flow in a flock channel area of a high rate water treatment plant comprising of:-

    a coagulation-flocculation process area for receiving water;

    a sedimentation process area further comprising of the flock channel area having a plurality of fins of varying heights positioned evenly and in ascending height throughout the outlet of the flock channel area, and a plate settler area to settle all sediment within the water; and

    a filtration process area for receiving the water from the flock channel area before filtering out purified water;

wherein the purified water can be disinfected separately and immediately for further use.

11. The system for deriving purified water efficiently through the improvement of the flow in the flock channel area of a high rate water treatment plant of Claim 10, wherein said fins are at most 85% of the height of the flock channel area.

12. The system for deriving purified water efficiently through the improvement of the flow in the flock channel area of a high rate water treatment plant of Claim 11, wherein said fins are at least 10% of the height of the flock channel area.

13. The system for deriving purified water efficiently through the improvement of the flow in the flock channel area of a high rate water treatment plant of Claim 12, wherein said fins are inclined between 25 to 75 degrees.

14. The system for deriving purified water efficiently through the improvement of the flow in the flock channel area of a high rate water treatment plant of Claim 13, wherein there are at least 3 of said fins positioned in the flock channel area.

15. The system for deriving purified water efficiently through the improvement of the flow in the flock channel area of a high rate water treatment plant of Claim 14, wherein said fins are made of stainless steel.

16. The system for deriving purified water efficiently through the improvement of the flow in the flock channel area of a high rate water treatment plant of Claim 15, wherein said fins are welded to the wall of the flock channel area.

17. The system for deriving purified water efficiently through the improvement of the flow in the flock channel area of a high rate water treatment plant of Claim 15, wherein said fins are tied to the wall of the flock channel area using a rivet joint.

18. The system for deriving purified water efficiently through the improvement of the flow in the flock channel area of a high rate water treatment plant of Claim 15, wherein said fins are connected to the wall of the flock channel area by adhesive bonding.