SUSPENDED SEDIMENT CONTROL AT WATER INTAKE USING AIR JET

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ABSTRACT

Air jet method is presented herein for the control of suspended sediment at water intake. The efficiency of the method has been investigated theoretically using dimensional analysis and experimentally in the laboratory. Three different sizes of sand (0.15mm, 0.30mm, and 0.60mm median diameter) were used. Empirical equations based on the experimental data have been developed, describing the efficiency of the proposed method. Tests were conducted to determine the effect of sediment size, water discharge and air discharge on efficiency of the proposed method in controlling the suspended sediment. The investigation has shown that as the air discharge increased and sediment median diameter decreased the corresponding efficiency increased. The efficiency was found to be reached up to a (60%) and which may be considered as a good controlling efficiency.

KEYWORDS: Sediment Control at Water Intakes, Watershed Management Research, Air Jet