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**SECONDARY SEDIMENTATION IN PIPES THEORETICAL
DERIVATIONS AND FIELD VALIDATION**

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ABSTRACT

This project deals on the cases where instead of formation of flocs and sediments in the treatment plant, sedimentation occur in pipes especially in old pipes. This secondary sedimentation will decrease the cross-sectional area of the distributions pipes affecting the flow capacity. This study focuses on this phenomenon based on literature review, theoretical considerations and field trips. The aim of this study is to find out the main causes of this sedimentation in distribution pipes and to make a comparison between theoretical values and that obtained in the field.

INTRODUCTION

The main idea of this study is to find out, what is the main causes of floc formation in the distribution pipes, which have a sediment or deposit and it will be effected in decreasing the internal diameter of pipes. In this stage, the carrying capacity of water will reduce proportionally to the rate of sedimentation. This also will affect in reducing the discharge.

Generally due to improper filtration of water or operation of treatment plants it will result in floc passing through the filters and being deposited as aluminum hydroxide on the wall of pipes, for aluminum hydroxide will be deposited regardless of the type of pipe lining and even a thin coating will reduce the carrying capacity.

Softening of water also sometimes produces a deposit on pipe interior, and thin type of deposit likewise will form on all surfaces. The deposit may be thin but it will nevertheless form ripples which cause eddying or turbulence along the walls.

In severe cases the deposit will become so thick that reduction in diameter become a factor. Finally, the physical layout and installation of any pipeline has a marked effect on its carrying capacity. If a pipeline has a large number of fitting and bends or is poorly aligned in the vertical or horizontal place, capacity will be reduced substantially.