PERFORMANCE OF THE EXISTING TRICKLING FILTER AT SOYSAPURA HOUSING SCHEME

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BY

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THIS THESIS HAS NOT BEEN PREVIOUSLY

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ABSTRACT

Communities living in flats produce both liquid and solid waste in large quantities. The liquid waste is called the wastewater. This wastewater will be a potential threat to the environment.

Soysapura Housing Scheme treatment plant was taken up for this research study. This plant consists of Imhoff tank, trickling filter, humus tank and sludge drying beds. In this treatment plant performance of trickling filter was selected for detailed study.

Grab samples were taken from inlet of the imhoff tank, trickling filter, humus tank and from the outlet of the humus tank. Grab samples were taken from 05 30 hrs. to 19 30 hrs. in two hourly intervals. Sampling was done by having a small gap between the first set of sampling and second set of sampling with the idea to see any variation in wastewater inflow patterns over a period. From the samples collected bio-chemical oxygen demand (BOD), chemical oxygen demand (COD), suspended solids (SS) and pH were determined.

The performance of the trickling filter was under detail study. A relationship for organic loading and trickling filter efficiency was obtained. It was found that the removal efficiency improved with increase of organic loading. Also a relationship of COD & BOD for the influent of trickling filter was obtained. With the loading pattern, the plant could be classified as a low rate trickling filter. Also this plant could treat further additional load after carrying out the suggested improvements.

The cause of trickling filter performance are discussed and areas which require further study and development are identified and recommendations are made for future investigations.

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TABLE OF CONTENTS

LIST OF FIGURES

Tables

Notations

BOD	Bio Chemical Oxygen Demand	(mg/l)
cm	Centimetre	
COD	Chemical Oxygen Demand	(mg/l)
Cu.m	Cubic Metre	(m^3)
d	Day	
hrs.	Hours	
Kg	Kilogramme	
l	Litre	
min	minute	
m	Metre	
Q	Volumetric Flow Rate	(m^3/d)
rev	Revolution	
rpm	Revolution Per Minute	
Sa	Specific Surface Area per unit volume	(m^2/m^3)
Sec	Second	
SS	Suspended Solid	(mg/l)
T	Temperature	(°/C)
V	Volume	(m^3)
W_z	Surface Area of Filter Medium	(m^2)