# PHOSPHATE REMOVAL FROM WASTEWATER BY CANNA LILY

A PROJECT REPORT SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE

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IN

#### **ENVIRONMENTAL ENGINEERING**

Submitted by: Research Supervisor:

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### **CERTIFICATE**

This is to certify that this report entitled "PHOSPHATE REMOVAL FROM WASTEWATER BY CANNA LILY" is an authentic report of the major project done by Sarbari Dutta (2K11/ENE/03) in the partial fulfillment of the requirement for the award of the degree of Master of Technology in Environmental Engineering in the Delhi Technological University during the year 2013.

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#### **ABBREVIATIONS**

APHA: American Public Health Association

AP: Available Phosphate

AIP: Appetite Inorganic Phosphate

BOD: Biochemical Oxygen Demand

COD: Chemical Oxygen Demand

CW: Constructed Wetland

DO: Dissolved Oxygen

G: Specific Gravity

HCl: Hydrochloric acid

HRT: Hydraulic Retention Time

IP: Inorganic Phosphate

KW: Kilo-Watt

NAIP: Non-Appetite Inorganic Phosphate

OP: Organic Phosphate

ppm: Parts per million

RGR: Relative Growth Rate

SF: Surface Flow

SSFW: Sub-Surface Flow Wetland

TDS: Total Dissolved Solids

TP: Total Phosphate

# CHAPTER-1 INTRODUCTION

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