

HIGHER TECHNICAL INSTITUTE

MECHANICAL ENGINEERING DEPARTMENT

DIPLOMA PROJECT

DESIGN OF A SURFACE WATER
PUMP

M/767

BY: NICOLAOU NICOLAOS

JUNE 1996

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MECHANICAL ENGINEERING COURSE

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HIGHER TECHNICAL INSTITUTE	PROJECT NO. 2608
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DESIGN OF A SURFACE
WATER PUMP

by

NICOLAOU NICOLAOS

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of the Higher Technical Institute
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Project Supervisor: Dr. A. Lazari



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This project is dedicated to my parents.

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INTRODUCTION

The purpose of this project, was to Design a surface water pump.

This system will pump water from a 30_m deep well with the help of an eductor. This type the eductor pump has come into wide use for small capacities combine a single-stage centrifugal pump at the top of the well and an ejector or jet located down in the water.

In this type of pump an amount of water must to be recycled so to flow water in the eductor in high pressures. The amount of water required to flow down the pressure pipe for jet operation increases as the lift from well-water level increases.

When the pump is used with the jet, the centrifugal pump operates at it's best efficiency and delivers water to make the jet work. The jet adds to the suction pressure on the centrifugal pump so that the two generate head in excess of that produced by the centrifugal pump alone. This is with reduced external discharge so a low capacity high-head unit results.

This low-capacity high-head unit is repaired in many small water systems. The centrifugal pump with a jet suction-lift limits and good operating limits.

The surface water pump can been required if there is any problem easier because it is of the well and out of the water instead of a turbine which is also extensively used. It can also be installed easier than the turbines and it costs less than a turbine.