



# OPERATION AND MAINTENANCE OF OXIDATION POND AND AERATED LAGOON

## INTRODUCTION

Oxidation Pond and Aerated Lagoon are popular sewage treatment method because of their low construction and operation cost. In addition, ponds are simple plants to operate and maintain. However, the ponds require large land areas. Oxidation ponds may comprise one or more shallow ponds in a series. The natural processes of algal and bacteria growth exists in a mutually dependent relationship that assists in the sewage treatment and the degree of treatment is weather dependent.

## COURSE OBJECTIVES

This course is designed to provide an understanding on the working principles of oxidation ponds and aerated lagoons, the importance of ponds maintenance and an understanding on the physical and maintenance process of the ponds.

## COURSE CONTENT

- Introduction to Oxidation Pond and Aerated Lagoon
- Type Of Ponds
  - Aerobic
  - Facultative
  - Anaerobic
- Physical Description Of Pond
  - Outlet Works
  - Distribution Chamber
  - General physical structure
- Pond Arrangement
  - Primary pond
  - Secondary pond
  - Multiple pond
  - Aerated lagoon
- Pond Operation & Performance
  - Parallel operation
  - Series operation
  - Mode of operation
  - Control structure
  - Pond performance
- Pond Overloading
  - Organic loading
  - Hydraulic loading
- Common Issues
  - Odor
  - Weed
  - Insect breeding
  - Vandalism
  - Structural issue
  - Vegetation
  - Leakage
  - Seepage
- Common & Optional
- Tools & Equipment
- Pond Maintenance
- Health & Safety
- Record & Testing

## LEARNING OUTCOMES

Upon completion of this course, participants will be able to:

- Identify types of ponds.
- Diagnose problems based on pond performance.
- Differentiate between parallel and series operation.
- Identify types of ponds overloading.
- Identify common issues on ponds and corrective action to be taken.
- Recognize the tool and equipment to be used for maintenance job.
- Perform operation & maintenance of the ponds in a correct and safe manner.

## DURATION

2 days.

## WHO SHOULD ATTEND

This course is recommended for sewage treatment personnel who are involved in the operation and maintenance of oxidation pond and aerated lagoon, namely supervisors, team leaders, technicians and operators.

## METHODOLOGY

Classroom lecture, group discussion and practical field visit.

## ASSESSMENT

Written assessment.