



## ON-SITE MEASUREMENT AND TESTING OF PROCESS CONTROL PARAMETERS

### INTRODUCTION

On-site measurements and testing is essential for rapid monitoring of key process parameters such as pH, DO and MLSS. Present day hand held or portable instruments are now widely available to meet this need. The hand-held instruments along with on-line instrumentations provide real time measurements as quick gauge and indication of process conditions. Since these measurements and tests are meant to provide quick check and response, they need to be carried out correctly to ensure that the appropriate counter measures are being taken. This training course covers the basic operational procedures such as calibration, care and maintenance as well as step by step operational guide on typical hand held instruments.

### COURSE OBJECTIVES

Kursus ini adalah bertujuan untuk:

- Memberi pendedahan asas mengenai sistem perkhidmatan pembetulan.
- Memberi pengetahuan mengenai jenis-jenis dan fungsi tangki septik.
- Meningkatkan kefahaman mengenai proses penyedutan tangki septik.
- Memberi tunjuk ajar mengenai carakkerja baik dalam penyedutan dan pembersihan tangki septik individu.
- Memberi pendedahan mengenai amalan baik dalam pengendalian enapcemar.

### COURSE CONTENTS

- Introduction to testing and measurement requirements
- pH measurement
  - Measuring pH
  - Common steps for using portable pH meter
  - Typical pH values observed
  - Troubleshooting
  - Common pH probe problems
  - Tips on care and maintenance
  - Using pH indicator strips
- Dissolved oxygen (DO)
  - Measuring DO
  - Common steps for using portable DO meter
  - Typical DO values
  - Troubleshooting
- Sludge settleability and MLSS
  - Sludge settleability measurement
  - Sludge settleability readings
  - Sludge settleability and SVI
  - Portable MLSS meters
- Settleable solids
  - Settleability solids method
  - Typical ranges of settleable solids
- Water clarity : Secchi Disc and Turbidity Tube Method
- Sludge depth
  - Measurement at tanks
  - Measurement at lagoons
- On-line monitoring



## LEARNING OUTCOMES

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

- Understand the proper techniques of measurement and testing of sewage process controls.
- Properly perform simple testing methods at site.
- Understand the steps for using portable pH, DO and MLSS meter.
- Perform calibration works on measuring equipment such as pH, DO and MLSS meter.
- Conduct standard periodical pH probe cleaning.
- Perform general maintenance on pH, DO and MLSS meters.
- Read and records process controls readings appropriately.
- Perform sludge depth measurement works at lagoons and tanks.
- Understand the benefit of on-line monitoring and the need to care such systems.

## WHO SHOULD ATTEND

All personnel involved in control and troubleshooting of sewage treatment process namely supervisors, team leaders, technicians, and operators.

## COURSE SCHEDULE

8:30am– 9:00 am	Registration
9.00am – 10.30 am	<ul style="list-style-type: none"> <li>• Introduction to testing and measurement requirements</li> <li>• pH measurement</li> </ul>
<b>10.30am – 10.45 am</b>	<b>Coffee/Tea break</b>
10.45am – 1.00 pm	<ul style="list-style-type: none"> <li>• Dissolved oxygen (DO)</li> <li>• Sludge settleability and MLSS</li> <li>• Settleable solids</li> </ul>
<b>1.00pm – 2.00 pm</b>	<b>Lunch break</b>
2.00 pm – 3.30 pm	<ul style="list-style-type: none"> <li>• Water clarity : Secchi Disc and Turbidity Tube Method</li> <li>• Sludge depth</li> </ul>
<b>3.30 pm – 3.45 pm</b>	<b>Coffee/Tea break</b>
3.45 pm – 5.00 pm	<ul style="list-style-type: none"> <li>• On-line monitoring</li> <li>• Demonstration</li> <li>• Assessment</li> </ul>

## COURSE FEE

RM800.00 per pax