



UNIVERSITI
TEKNOLOGI MARA
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PORTABLE WATER SAMPLING KIT BLUEPRINT REPORT

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1. EXECUTIVE SUMMARY

Water quality unit is one of the main scopes of Environmental Health Officer in Health District Office. They need to maintain a good water quality especially drinking water for all the people in this country have a good water supply from the water consortium for their state for example Air Selangor (AIS) that before this known as Syarikat Bekalan Air Selangor (SYABAS). The company needs to follow, Malaysia Drinking Water Quality Standard such as limitation of chlorine in water from sampling station is below than 2 and higher than 0.2. The main objective of water quality unit is to elevate the health of the public by ensuring that the supplied drinking water is safe and acceptable to the consumers. This can be achieved through an effective regulatory program by reducing the occurrence of epidemic or poisoning associated with the unsatisfactory supply of water. This program ensures that health personnel informs the Water Department and Water Company immediately about quality violations set by the Health Ministry and are ready to take a recovery step before the onset of a disease or water borne poisoning. If there are some parameter from the sample not follow the national limit standard, Environmental Health Officer (EHO) will issue a Correction Report (CR) for the water consortium to check their treatment plant.

The main goal of this project is to create a portable water sampling unit that can run the test for all three physical parameter of water that is residue for chlorine, the temperature of water, Ph of the water, and water turbidity. Nowadays, EHO needs to carry 3 larger sampling unit that tests all of this parameter. With this project, they don't need to waste their time and energy to bring a lot of machines and can finish the job faster than usual. This project also can reduce the cost for maintenance or calibration for 3 machines than 1 that will be created. The durability of this product also become the main objective for the company. This product can be used without calibration longer than usual.

2. PRODUCT OR SERVICE DESCRIPTION

Portable Water Sampling Unit need to become the main product for all the Health District Office in Malaysia that will ensure the water sampling activities easier and more accurate than before. Less equipment at the field will make the work faster than before. Nowadays, there is complete sampling unit for 1 machine but the machine a big ang, not portable that can bring to the field, it can be used in the lab or office only using electric supply.

After doing some research, the team comes with an idea to create a product that will make the water quality unit easier and cut the cost for the government to pay the maintainance for the old product in calibration or repair.

2.1 Purpose of development

The main purpose of developing this product is to create a equipment that can run the test for the basic physical parameter of water quality test.

2.2 Product concept

- User friendly
- Using high technology to get faster water test result.
- High durability
- Rechargeable portable unit (doesn't need batteries)

2.3 Application

- Less button to operate the equipment.
- The power for the equipment comes from the electrical power that store in buit-in batteries.

2.4 Unique features

- Only use 1 probe to test the water.
- Lighter than usual water sampling equipment.
- Can run test for 4 different parameter.

The key components of the equipment:

Component	Basic	Advanced
Probe	One probe only for temperature and Ph test	One durable probe for all the test.
Power source	Using AA batteries or AAA batteries depend on the type of sampling tool.	Using electrical supplt to charge the equipment.
Charging	Cant be a charge. Usind disposable batteries.	Internal rechargeable batteries that can last as long as 8 hours.
Sencors	1 sensors for 1 equipment.	4 sensors for 1 equipment. Turbidity readings, Ph, temperature, and residue chlorine.