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**ABSTRACT**

Water is vitally necessary for our survival as human beings and we must do everything possible to ensure its quality for both now and the future Since in nature, no pure water exists it is vitally important to continuously monitor the quality of water supplied to consumers This project report is based on this monitoring system to ensure quality drinking water is made available to the end-users and notification is possible in the situation of quality compromise and supply schedule

Three (3) main sources of water exist in the natural: atmospheric, surface and ground water sources Water from this sources is usually referred to as fresh water if supplied with little or no treatment otherwise it is drinking water Efforts have been made in standardizing the water treatment and distribution system through the ages and research is still ongoing on further standardization to ensure safety of consumers of this life’s essential commodity A very important point to note is that our focus should not just be on the treatment process but also on the maintenance of the biological safety of the drinking water throughout the distribution network

The system employed in this project consists of seven (7) major units, namely: Freescale FRDM-KL25Z Freedom Development Platform (Microcontroller Unit, Analog-to-Digital Converter Unit, UART Unit); GSM (SIM908) Modem; LCD TFT; Power Supply; pH Sensor; Turbidity Sensor and; TDS Sensor Unit All these units combine to make the automated water treatment and distribution system effective The sensor units served as inputs to the set-up; they measured the three (3) parameters highlighted in the project description respectively; the information was fed to the FRDM-KL25Z Board for processing and the TFT LCD and the GSM Modem, SIM908 served as the output units for the overall system

The Turbidity, pH and TDS of the drinking water at the dispensing tank were continuously monitored and acquired by the sensors and then sent to the KL25Z128 for further processing In a situation of non-conformity between the measured value of one of the monitored parameters and the standard value, a warning message is sent to the control station with the specific parameter name and value, to take the necessary actions, such as closing the valves, warning the end customers from using the water The LCD display was interfaced with the microcontroller in order to have continuous access to the values measured by the sensors

Our objectives for the project were realized We were able to successfully measure the parameters specified at the treatment level effectively, except for pH, and the notification system also worked fine