

## **Internship Reflection Report**

### **Internship Description**

During my summer internship with the Water Supplies Department from July 3, 2023 to August 25, 2023, I conducted research to support their goals of using reclaimed water for flushing and cooling purposes. I tested samples from Shek Wu Hui and Ngong Ping to evaluate if the reclaimed water meets the necessary quality standards for flushing, cooling, and general reclaimed water guidelines.

Additionally, I examined the use of the edible dye Acid Blue 9 (AB9) as an indicator to prevent accidental mixing of reclaimed and drinking water. Since AB9 can interfere with ammoniacal nitrogen testing, I explored 5 methods to remove this interference and identified the best approach. Through spiked sample testing, I verified that AB9 does not impact actual ammoniacal nitrogen and BOD5 results when using the optimal method.

I also researched maintaining AB9's blue color in reclaimed water, which is depleted by reactions with chlorine disinfection and chloride. By evaluating various concentrations, I determined conditions to preserve the blue color for at least 48 hours as a visual identifier.

In summary, my internship focused on ensuring reclaimed water quality and evaluating AB9 as a dye tracer, supporting the Water Supplies Department's goals to safely utilize reclaimed water and avoid contamination of drinking water. My research provided beneficial data to optimize their treatment and monitoring processes.

### **Reflection**

Through my internship at the Water Supplies Department, I have learned a tremendous amount of valuable skills, both technical and professional. In the lab, I gained significant hands-on experience conducting various water quality tests, including assessments of reclaimed water samples from Shek Wu Hui and Ngong Ping. I also learned laboratory techniques for working with Acid Blue 9 dye and chlorine, acquiring practical knowledge about spectrophotometry, distillation, and measuring chemical interactions. On top of building these technical abilities, I developed important skills for a professional workplace environment. I learned how to take initiative on projects, collaborate with coworkers, and manage my time

effectively when conducting research. My communication skills were also refined through regularly reporting my results. Overall, this internship provided me with critical growth in specialized water testing capabilities along with universal professional competencies. I am now well-equipped to apply these laboratory and real-world skills in future educational and career pursuits.

### **Safety and Ethical issues**

As an intern at the Water Supplies Department, I ensured that all of my work met the highest safety and ethical standards. When conducting laboratory tests on water samples, I followed protocols and wore protective equipment like lab coats, gloves, and goggles to minimize risks. Proper handling and disposal of chemicals like chlorine and Acid Blue 9 dye was crucial to avoid spills or contamination. For testing procedures involving equipment like spectrophotometers, I received training on proper usage and carefully followed instructions to avoid any accidents. In terms of ethics, I made sure to accurately record and report data, without falsification that could negatively impact water safety recommendations. I maintained confidentiality related to potentially sensitive information about water sources and infrastructure. When writing reports, I cited sources appropriately without plagiarism. Upholding rigorous safety protocols and ethics was essential, as my work aims to ensure water quality and public health. This internship instilled in me the importance of exemplary professional conduct and preventative safety measures when handling chemicals and collecting data.