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Monitoring In Lebanon

If the water in Lebanon had to speak,

What would it say???????????

They turned me from a source of life to a disease causing agent

Water born diseases according to M.P.H. as on 29/6/2024

Dysentery: 390 cases

Typhoid fever: 420 cases

Viral hepatitis A: 1472 cases

Why????

Mainly because monitoring is inadequate.

The analysis of the laboratory results of one water establishment during the year 2022 revealed the following:

- The number of samples decreased significantly.
- Sampling coverage was not enough with large variations among cities and villages.
- Absence of free residual chlorine in 72% of the samples tested.
- 18% of the water samples tested for chlorine residual had a value less than that required by the NL 2016.
- - Bacterial and chemical tests performed are insufficient to judge on the water quality since only 12% of the parameters required by NL 2016 are tested.

No reporting??????????????

- ✓ A lot of reports
- ✓ A lot of studies
- ✓ A lot of projects
- ✓ A lot of actors
- ✓ A lot of donors

However without a clearly developed National Water Safety Plan that provides an umbrella for all these efforts no progress would be accomplished

Chlorine Safety Plan

A

Success Story

Project

Funded by JICA

Implemented jointly by B.M.L.W.E. and Water Quality Control Department at M.E.W.

During December 2018 – September 2019

Project Overview

The field visits carried out by the coordinators over more than 20 years to water sources, chlorination stations, water treatment plants, reservoirs, networks and laboratories, showed the lack of continuity of chlorination.

Which reflects negatively on the quality of the water distributed in the whole country and thus on the general public health.

So it was necessary to conduct an assessment on the safety and continuity of chlorination in cooperation with B.M.L.W.E. that was chosen as a pilot establishment.

During the year 2017, 86 operating stations were inspected.

The coordinators filled out:

- Questioners that were developed by Quality Control Department to assess the workers' knowledge in topic of Chlorine safety.
- Forms to assess the conditions of the Chlorine rooms and devices present in the stations.

The analysis of the assessment were shared with B.M.L.W.E. work team, after several meetings it was agreed on.

- Selecting four stations to be rehabilitated which were Ain El – Sheikh, Mkalles, Kournet Al – Hamra and Al – Kaa
- Preparing tender documents for each station that takes into consideration work safety, conditions of the facility, the workers and the neighborhood.
- Conducting training courses for the workers on topics of general safety and preventive maintenance.

It is worth to mention that JICA has adopted the project and provided a fund of approximately 85,000$

Activities

A. Training sessions on Chlorine safety:

it has been agreed with B.M.L.W.E to hold training sessions on September 23, 24, and 25 2019 at 3 stations in Hazmiyeh, Dbayeh, and Shabrouh dam, so that the largest number of workers in the Chlorine stations can benefit.

Given that the establishment provides all logistic facitlities.

The coordinators at the Water Quality Control Department prepared the:

- Scientific material for the training course. As well as the booklet that was distributed to the participants.
- Posters that were placed at the four stations focusing on personal protective equipment and safe transport of Chlorine bottles.
- Warning signs on smoking prevention, danger of Chlorine, and how to store Chlorine bottles.

The training session Topics:

- Principle of Chlorination and factors effecting its effectiveness
- Forms and properties of Chlorine
- Number of Chlorine rooms, location and Technical Specifications.
- Safety measures for handling Chlorine bottles during receiving, transporting, and storing.
- Environmental risks to control (humidity, heat, and foreign materials)
- Health effects of Chlorine gas exposure.
- Emergency measures and equipment in case of exposure to Chlorine.
- Introducing Chlorine system devices, inspection, and maintenance (corrective and preventive).
- Inspection checklist for monitoring Chlorination systems on daily, weekly, and monthly basis.

B. Rehabilitation and engineering works

- Dividing the station into two separate rooms when needed in order to separate the Chlorination system from the rest of equipments.
- Civil works to address water leak, that leads to corrosion of equipment and electrical hazards.
- Replace existing doors (if any) with corrosion – resistant metal doors that open to the outside.
- Provision of a complete Chlorination device with an automatic change over.
- Provision of scrubber system to neutralize the chlorine gaz in case of leakage
- Provision of an alarm device for Chlorine leakage.
- Renewal of electrical components system, including display and control panel, ventilation devices and external electrical switch.
- Provision of face mask and hand gloves to protect against Chlorine leakage.

C. Provision of 28 Chlorine test kits to be distributed as needed.

Challenges

The Water Quality Control Department wanted to go through this exercise on Solo without the help of external consultants to get the maximum benefit of the Japanese Fund.

Achievements

- Experience in topics related to safety
- Develop tender documents for Chlorination stations that respect the international safety requirements.
- Stimulating the coordination between M.E.W. and B.M.L.W.E.
- The ownership of the project was clearly defined and shaped.

Suggestions

This project remains incomplete unless it is followed by steps that must be taken by the establishment:

- Develop task specification for workers in Chlorine stations
- Identifying work team for Chlorine maintenance and monitoring.
- Adopting a daily, weekly, monthly, and annually monitoring and maintenance schedule.
- Monitoring the implementation of the schedule and take appropriate measures in case of violations.
- Upgrade the tender document for buying Chlorine bottles to take into account:
- Bottle conditions
- Date of manufacture and pressure testing
- Develop an emergency plan in the event of Chlorine leakage and circulate it to the workers to follos

Ensuring sustainability

The Water Quality Control Department in cooperation with those concerned in the B.M.L.W.E with monitor the proper implementation of the project and related to it.

Hopefully, this project will be circulated to all Chlorine stations in the country to assure that water will stop being a disease causing agent and get back to its normal charecteristics

Water a source of life