

## Q&A

**31Q6: We faces difficulties to reduce thief of water (illegal connection).**

**Please tell us effective countermeasures. (Mr. M.O. Nigeria)**

### **A: Encounting Illegal Connections in Phnom Penh, Cambodia, A Lesson Learned**

In 1990's the water loss in Phnom Penh city, the capital of the kingdom of Cambodia has been raised to about 70%. Illegal connections have been playing a big role; one case a day, in average, has been reported. To tackle this problem, Phnom Penh Water Supply Authority (PPWSA) has applied the following measures:

#### **1. Increase the service pressure**

PPWSA has increased its service pressure from 0 to about 3 bars by the year 2000 by replacing the old leak pipes and increasing the production capacity.

a. The benefit of raising service pressure: Easier to detect leaks. High pressure surges the sound of leak and the leak often comes up to above the ground which will be seen easily. Disadvantage: loss more water if the leak flows into drainage, need careful search and detection.

b. Non-skill person cannot tap the pipe. To tap a high pressure pipe (>1 bars) need skill personal and proper equipment.

c. Customers in the high floors are happy with our service, enough water.

#### **2. Proper pipe material.**

PPWSA is using only 2 types of pipe, transmission mains from DI, 300mm up, and distribution mains from HDPE, 225mm down. All pipes shall be laid at least 0.5m below ground. To tap the pipes requires deep digging, appropriate fittings and skill.

#### **3. Location of water meter.**

To make easy access for meter reader as well as protection against thief, the meters shall be located near entrance gate or in the front of customer house.

#### **4. Educate our personnel.**

Only the skilled personnel can tap. Therefore, PPWSA staffs have to commit not to join, but to fight against illegal case. They have been encouraged to report any illegal actions by award. Strict penalty has been applied, if anyone join, he/she will be fired

and, additionally, could face the case at the court.

**5. Educate our customers.**

Good moral have to bring back. Customers have to know their duties, to pay what they consume and not to steal. We encourage them with award to report about any suspect.

**6. Apply strong penalty.**

Immediate action when received report. Strong penalty has been applied. The unsolved case will be sent to the court, and some time we do need cooperation with media, mainly TV, to show up the case.

**7. Active monitoring and fixing the leak.**

The whole service area has been divided in DMA zones and sub-zones. There are 3 main activities:

- a. Night flows are monitored. Night step test will take place if any high night-flow.
- b. Routine checking by water-loss-team, using listening bar mainly.
- c. Stand-by teams immediate fix the leak, less than 2 hours after received information.

Nowadays, there are rare illegal connections, one to two cases a year have been reported.

*(Answerer: Dr. Chea Visoth, Phnom Penh Water Supply Authority, Cambodia, 2016)*