WaQuAC-NET Newsletter

Water Quality Asian Cooperation Network

http://www.waquac.net/english/

Volume 28, issued on April 10, 2016

For Safe Water, Do Network.

WaQuAC-NET Newsletter vol.28
CONTENTS

1. Technical Q&A

Question & Answer Corner

We welcome any opinions, and questions to this Q & A Corner. Please contact us.

Q: *Recently, we have algae problems in our raw water. We consider starting odor test. Please explain its procedures. (L.N, Cambodia)*

A: A kind of algae is known as a source of unpleasant odor, so it is necessary for us to know algal growth in raw water. In Japan, musty odor problem of water supply is mainly occurred by odor producing blue-green algae in eutrophic lake. Odor assessments using human sense are performed to provide qualitative descriptions and approximate quantitative measurements of odor intensity.

1. Sampling

Sample bottle should be cleaned before analysis in order to exclude contamination of other odors. The sample should be kept cool and tested as soon as possible after collection.

2. Panelists

For assessing the odor of samples, the testing panel should be composed of people familiar with the odor of the source to be analyzed. Panelists should be free from colds or allergies that affects

odor response, should not eat or smoke up to 1 hour prior to the test. Ideally, on the day of the test, panelists should avoid the use of perfumes or cosmetics, including scented soap for hand washing. At least three panelists should be available to perform the assessment of odor.

3. Odor assessment (qualitative descriptions)

Water sample is smelled by a group of people in order to provide qualitative description of the odor; in addition, an indication of intensity of the odor. If you can record the indication of intensity of the odor, the information is useful for evaluation of water quality accurately.

If your water treatment plant use chlorine for disinfection, treated water has chlorine odor. In that case, the sample should be de-chlorinated for further assessment.

Analytical Procedure

Step 1 Pour 100mL of sample water into the flask with stopper（300mL）.

Step 2 Keep the flask to 40～50 ℃ by water bath. You may heat the flask by microwave carefully for a short time.

Step 3 Shake the flask and its contents intensely, open the stopper, smelled the contents immediately.

Step 4 Classify the odor intensity and nature (see Table 1 and 2).

Table 1 Intensity of odors

No odor <Very mild<Mild<Strong<Very strong

Table 2 Description of odors

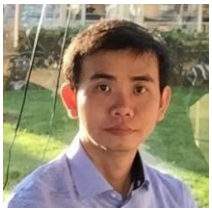
No odor
Aromaticity (such as fruity, cucumber)
Vegetable (such as grassy, woody, seaweed)
Musty or earthy
Fishy
Medicinal (such as chlorinous, phenolic, oily)
Metallic
Corruptive(such as sulphide , ammoniacal waste,)
Other

Answered by：
Toshiko HOSON
（Osaka Water Supply Authority）

~ Report of foreign members ~

Situation of Siem Reap Water Supply Authority

SRWSA, Cambodia
Kut Nimol



Mr. Kut Nimol

Siem Reap located in the northwest of Cambodia. It consists of 13 communes with an area of 460km2 and a total population of about 250,000 people with an average of 6 people per household. The population growth rate is around 3% per annum.

Today Siem Reap is one of the most popular tourist **destinations in the world**, its large number of hotels that make the **water demand to be higher** with a projection quantity of 90,000m3 per day by 2030 with 50% of the water produced to be consumed by the tourist.

Siem Reap Water Supply Authority (SRWSA) has **become an autonomous enterprise** since January 2007. It is **directly responsible for the daily management** of the water supply service with full autonomy of Financial and administration, and has ownership of all infrastructures except for reforming tariffs to be approval by government.

The **General Director** and **Board of Director** are nominated by government with 3 year mandate. Board of Director is the highest decision maker of SRWSA, with the authority to determine the objective and control of management to ensure its efficiency and effectiveness. General Director is delegated the authority from Board of Director to manage SRWSA.

SRWSA has the **mission for** providing drinking water service 24 hours to the citizen and served the numerous hotels in Siem Reap city.

The present production capacity is 15,000m3 per day with coverage of only 15% of population. The quality of the water is controlled regularly in WTP and at different points of the network and this quality it can be drinkable. The program of water quality analysis we do it daily check on 10 basic parameters are ***Temperature, Taste, Oder, pH, Total Dissolved Solid, E.C, Turbidity, Color, Residual Chlorine, Alkalinity*** ; weekly check 3 parameters: ***Iron, Mn, Nitrogen Ammonia (NH3)*** ; quarter check 12 parameters: ***Cl, Hardness, Nitrite (NO2), Nitrate (NO3), Al, SO4, Organic Carbon, Hydrogen Sulfide (H2S), Zinc (Zn), Copper (Cu), E.coli and Total Coliform*** and yearly check 6 parameters: ***Arsenic (As), Barium (Ba), Cadmium (Cd), Fluoride (F), Lead (Pb), and Mercury (Hg).***

Total length of pipeline network is 140km with the coverage of 35% in the coverage area. Water pressure ranges between 0.5 bar to 1.5 bar and, however, in some areas the pressure is lower than 0.5 bar. NRW is around 8.30%. It is quite well but our target is less than 7%.

Water tariff uses rising block tariff whose average bill is 0.54 USD per m3. Meter reading, billing, and collection are carried out monthly. The collection rate is around 99.90% and all customers use individual connection. Tariff is more expensive than affordable one for all the population. Total connection is 6,500 connections including 20% of commercial customer and by 2018 the total

SRWSA's Water Treatment Plant

Water Quality Check Activities in WTP's Lab

Staff of Billing Office

connection supposed to be 18,000 connections and by 2025 it will reach 36,000 connections.

Financial situation of SRWSA is full cost recovery. OPEX are covered by water tariff. Net profit ratio is about 25% to 30%. SRWSA is using its working capital to invest in increasing production capacity, extending networks and as well as administration building.

Currently, total employees are 79 and 12staff/1,000 connection. It is quite high,

because we are carrying out production and network expansion projects, but the staff ratio target will be lower than 7staff/1,000 connections by 2025.

The external assistance may assist SRWSA on master plan and technical detail design or supervision to the construction by loan or grand project. The water resources for new expansion projects was accepted by government. These are "West Baray Lake" which the maximum intake capacity is15,000m3 per day, and "Tonle Sap Lake" which the intake capacity is more than 60,000m3 per day".

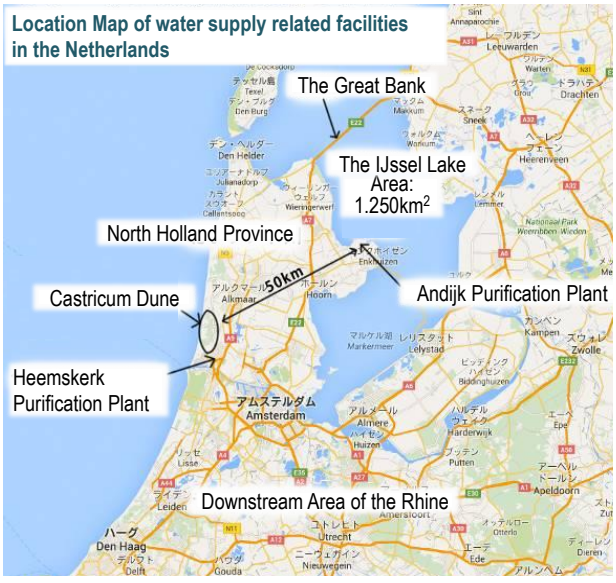
Today, there are **three** loan projects by three different **donors** (**JICA, ADB and AFD**) on **Production Capacity Expansion** and **Distribution Network Expansion.** The first project (**AFD**) is expansion of distribution network, and going on the construction tendering. It will be constructed gradually from third quarter of 2016. All of the projects will be completed in 2022. And total loan amount is 113 million USD.

AQUATECH 2015 and water supply in the Netherlands

Fusion with environment and advanced technology

Gensuke ARIMURA
(Water supply Network News).

"AQUATECH 2015", the largest water related exhibition in Europe, was held from 03 to 06 November, 2015 in Amsterdam, the Netherlands. I participated in this exhibition, and made a visit to desert infiltration and advanced treatment plant. Although I put a common title to this article, the experience was so exciting and shocking to me that I really wanted to entitle as "Startling and awesome AQUATECH, desert filtration, water treatment plant with integrated advanced technology". Since detail report on AQUATECH 2015 will be made at later date if I have another opportunity, I, just noted main four points here; 1) it is far larger scale exhibition than any one in Japan, 2) membrane technology is quite popular at the exhibition, 3) there are a lot of exhibitors, visitors from China, 4) special congress of IWA (International Water Association) including 50 sessions was held alongside.



【Desert infiltration and hi-tech treatment plant】

As “Netherland” is the meaning of “lowland country”, one quarter of the land is below sea level. It is located in the most downstream of the international river the Rhine which water is emitted from a water source in the Alps. It has a history of struggling with water quality issues for ages. It is known that trihalomethane has been found here first in the world in 1972.

Local administrative division of the Netherland mainland is divided into 12 provinces, and all provinces are divided into municipalities, of which there are 441 municipalities. In the past, a number of water utilities exited also in the Netherlands, which have now been integrated into the water supply utilities of 10.

Since the Netherlands has a high confidence in the groundwater, the pumping of groundwater had been imposed "groundwater tax" until recently with the background that the groundwater was supposed to be precious water resources. Under such conditions, it was PWN, the utility supplying water to North Holland Province, which thought of trying to process the surface water thoroughly. PWN has two type of process at the same time; carrying out dune (sand formed hill) infiltration process in vast dune, and performing a thorough water treatment in its main water treatment plant, Andijk Water Treatment Plant. While utilizing the natural water cycle as dune infiltration, with even membrane filtration, PWN realized a water treatment plant that consolidates the “most-advanced technology”. It can be said that coexisting with the fusion of this natural water circulation and advanced technology is the essence of the Dutch water supply.

【Castricum Dune】

Confidence in the groundwater has been materialized as a reality, which is Dune infiltration system.

Castricum Dune is located at about 30km from Amsterdam to the northwest. Dune, a facility of the PWN, includes great reaches of sand dunes, shrubs, grassland and forest woven together. I was told that dunes were constructed structures, and saw some dunes under construction; however, the landscape was too vast for me to recognize where the artificial structure starts and natural landscape ends. It was unbelievable that those were water supply facilities.

Area of Dune is 7400 ha, in other words that it is 74 km2. The settled water, treated in Andijk Water Treatment Plant away 50km to the east-northeast, is transmitted to the sand dunes, and stored in basins in the dunes to penetrate over a period of 30 days. After 30 days, water is collected through collection pipes and conveyed to Heemskerk Water Treatment Plant for membrane filtration and UV treatment before distribution.

Andijk Water Treatment Plant, the "modern state-of-the-art", has two processing systems whose settled water is conveyed to Confidence Dune. In the case of Confidence Dune, it treats settled water, but some dunes of other utilities penetrate water which is treated by sedimentation and sand filtration.

Infiltration velocity is 800L/s, that is, 69,120m3/d. It is seemingly fusion with vast nature, however, after understanding the management of treated water amount, unveiled that is under strict engineering control.

at Castricum Dune

【Andijk Water Treatment Plant of multiprocess】

The Lake Ijssel is artificial freshwater lake, created by “a great bank” closing a former inland bay, the Zuiderzee. Main inflow of the lake is the River Ijssel. The creation of Lake Ijssel for freshwater lake and land reclamation are national major projects. What kind of treatment process is

adopted when they decide to utilize surface water against their strong confidence in the groundwater? Moreover, the surface water is as worse as from the Lake Ijssel, which is the end of the Rhine.

The treatment process is as follows; raw water of the IJssel Lake → fine eyes of rotary screen → continuous ion exchange resin adsorption treatment → accelerated oxidation with hydrogen peroxide→ ceramic membrane treatment (MF membrane) → UV → activated carbon adsorption → chlorine dioxide. This system, its maximum water supply capacity of 145,440m3/d, started to supply water in autumn 2014. Particularly eye-catching in this flow is that 192 units of membrane are packed in a can body cylinder. This has advantage of durability against the pressure of the backwash. The one packed cylinder is regarded as one unit of membrane. PWN named this "SeraMac®" because its shape is “similar to the McDonald's", they explained. It is a big deal humor spirit. The size is 3.5m high including foot stand, and 4m wide. The appearance of placed 10 cylinders has great tremendous. The breakdown of the capacity is; 192 membrane units of 24m3 capacity x 75m3/d × 10 cylinders. After 30 minutes' filtration, back-wash is conducted. For back wash, 500 kPa compressed air is supplied to the filtered water basin and jointly pushed into membrane units through its outlet point. In order to discharge the detached contaminants completely out of the system, 200kPa compressed air is supplied to the units through its inlet point at the upper part of the unit. The sound of back-washing is so impact sound that it could be said "explosive cleaning". Everything of the plant seems to be in another league.

“SeraMac” of Andijk Water Treatment Plant

4 units of UV connected in series

It is also first time for me to see the facilities that 4 units of UV are connected in series like a SL train. It takes only 40 minutes to treat water from taking raw water till supplying treated water. It is so efficient system that I was lost for words. Moreover, Andijk Water Treatment Plant has a large scale experimental facilities to improve and develop technology through operation as same process flow as the actual plant.

【Learning from the Dutch water】

Since the environment surrounding Japan's water supply is quite different, it is difficult to make a simple comparison, there is several points to learn. In the first, water supply operators are integrated in 10 utilities, and the sector was radically reformed. Secondly, semi-public organization can realize free-thinking and achieve entirely new treatment process. Thirdly, big decision was effectively made to invest in so innovative water treatment. Fourth, they have progress and constructive attitude to keep unending development through investment in establishment of research system.

◎Introduction of New Members◎

Let's get exposed to water culture & technologies in foreign countries!

Kenichi UMEYAMA

Hello, WaQuAC-NET members! I am Umeyama, new member of the group. On the occasion of new-year party in January, I got opportunity to write this article by chance.

Currently, I am working for an environmental consulting company and am not familiar with water technology or international cooperation as other members. Hence, I would like to introduce about my experience to study water treatment technology abroad both in Thailand and the Netherlands in 2012-2014 for future professional water engineers. Since I collected a lot of information prior to make a decision on what and where to study, I am grateful if this article would be useful for interested persons especially in Asian countries.

Asian Institute of Technology (AIT) in Thailand:

I studied in the Asian Institute of Technology (AIT) in Thailand and the UNESCO-IHE Institute for Water Education in the Netherlands from 2012 till 2014. AIT, as many Japanese members may know because Japanese government has dispatched many lecturers there, is an international institute located in 40 km north of capital Bangkok of Thailand. Earlier, the institute was established based on Thai domestic law, but has been changed its status into international institute when new AIT charter came into force in 2012. AIT is a graduate school composed mainly of master and doctoral courses. In August 2012, when I entered AIT, 340 new students joined master's and doctoral program from 28 countries across the world including 103 from Thailand, 59 from Myanmar, 25 from Nepal, 20 from Pakistan, 12 each from Bangladesh and Vietnam, 11 from France, 10 from Cambodia and India respectively. Roughly speaking, nearly 90% of students are Asian mainly from South Asia and Southeast Asia, and other 10% come from countries in Europe, North and Latin America, and Africa. Japanese students are very few; the regular students are several in total. Recently, the number of Japanese students in AIT of short term program including exchange program has increased slightly. Concerning the water sector, AIT has exchange program with University of Tokyo and University of Yamanashi.

UNESCO-IHE Institute for Water Education in the Netherlands:

UNESCO-IHE Institute for Water Education, located in Delft, the Netherlands, is under one of the subordinate organization of UNESCO and research institute specialized in water sector.

Its research fields cover various issues on water not only from the aspect of science and technology but from various cross cutting angles such as sociology or economics, and they have extensive network with international organizations, research institute, national governments, and private companies.

In Delft, there is the Delft University of Technology, which is a famous university in the study of engineering system including the water sector, and because UNESCO-IHE is in the neighborhood to go by bicycle, they have made cooperation in various aspects with the university.

Since the Institute is an organization of the UN, one of its important missions is a development of the emerging countries. As the Institute has many master's and doctoral students, most of them are from the emerging countries in Africa, Asia and Latin America, and many of which are officers of environment or water-related central ministries who have already working career of several years for the sector. (Professors are mostly Dutch but

there are few Dutch students). Thus, the institute provides practical education in addition to academic research, where experts from developing countries can receive training and obtain academic degree with assistance of scholarship of Dutch government. By the way, the institute is not popular in Japan, while relatively popular in countries in Africa and Latin America.

Education in both countries:

AIT and UNESCO-IHE have joint programs in water sector such as wastewater treatment, urban water engineering, and water resource management and irrigation, which I participated in and had opportunity to get education in both countries. I found there is a large difference in education in Thailand and the Netherlands. AIT's students are mostly in early 20's, without working experience. The students receive lectures on the theory of water treatment techniques which seems to be same as taught at universities in Japan. On the other hand, students of UNESCO-IHE are mostly experts in the mid-career in late-20's or 30's, so the program is designed for more practical contents such as field work of water sampling, case-study, or role-play, and focuses to be more participatory approach. The difference might not even mean that either is bad or good, but for me that know only a passive-type education in Japan, the experience in the Netherlands was very fresh. During studying, I was often asked why you come to study to Thailand. I answered in joke that "Thailand looks to have more potential than Japan where there is much uncertain that the population has been declining and the economic downturns". Thai and its neighboring countries students are still wonder because they are interested in and yarn for studying in Japan considered that more fund and infrastructure for education is well established. Frankly speaking, what is educated in AIT and UNESCO-IHE is not that much different from what it is in Japan.

However, in terms of multi-culture, these institutes are very interesting, and provide good occasion to learn cultures and situations including water and environmental issues of the world and make friends. Since scholarships for students from developing countries have been well arranged, I hope the persons willing to study abroad consider these institutes as one of the choices.

Daily life:

Here, I would like to introduce about daily life in Netherlands since WaQuAC-NET members must be familiar with how to enjoy staying in Thailand. What do you think of the Netherlands? "Tulips, windmills, Van Gogh", don't you? Certainly, these are tourist attractions of the Netherlands as the images and they are definitely fascinating. Dutch attractions are windmills, flower garden, and art museums where you can see works of great painters such as Van Gogh, Rembrandt and Vermeer. If you are a water engineer, you should not miss the canals, huge dikes, and of course, a windmill. However, in terms of food, you may find some difficulties. Because loving frugal and simple life, and cherish the family, Dutch do not do much eating out. Therefore, there are few good and cheap diners. Dutch people have bread and cheese for almost every lunch, and menu in cafeteria does not have variety. Although bread and cheese tastes so nice, I missed rice very much. I really enjoyed beer with ample choice, cheap price and nice taste. The Netherlands are close to Belgium and Germany, so beer lovers would surely enjoy staying.

Finally, water issues in the Netherlands:

Netherlands has flourished in research of water. Dutch, one fourth of the land of which is below sea level, suffered by huge flood in 1953 affecting costal area of North Sea. As the result, about 2,000 people were killed and 150,000 ha of land were flooded. In the aftermath, the government promoted "Delta Project", resulting in developing flood control technology, and reaching the world's highest level of the technology. In addition, not only the "amount" of water, they have been working for advanced technology development for

the management of "quality", particularly on biological treatment. For example, Anammox* is a technology developed by researchers of the above-mentioned Delft University of Technology. Small-scale constructed wetlands are adopted to treat wastewater from households. The background to this, the Netherlands has been plagued by pollution as well as Japan. In addition, the Netherlands, is one of the world's leading agricultural country, seems to focus on pollution control measures of soil and water.

I personally felt that there is a fundamental difference in water technology development of between Japan and the Netherlands. In Japan, many companies and enterprises focus on development of physicochemical technology, such as membrane and materials. On the other hand, researches on "modeling using the computer," and "biological treatment technology" are thriving in the Netherlands. These technologies are relatively low cost, and are expected to achieve high performance, which can be applied in developing countries. These "frugal" and "practical" technology development seems to match characteristics of the Dutch, so I have been very interested in. Hope you would be able to have an opportunity to hang around Netherlands with these notes.

＊Anammox：abbreviated expression of “Anaerobic ammonia oxidation”. For detail information on reaction of Anammox, please refer the following URL:
http://www.sswm.info/content/anammox

Field report

Interim Report on the Field Experiment of High-turbidity Water Purification by Small-Scale Plant

Shigeru TAKEBE (FUYO CONSULTANT CO., LTD.)

1. Introduction

Mr. Shigeru TAKEBE

Turbidity of south-east Asian rivers varies greatly. Especially in the rainy season, its value often shows nearly 1000 NTU.

In order to treat such raw water, we generally use rapid sand filtration system with coagulation-sedimentation. However, it costs a lot of money and its maintenance is not easy for people in the developing countries, especially in small villages.

Therefore, as system taking the place of rapid filtration system, I designed slow sand filtration system with coagulation-sedimentation which is as low-cost, low-technique and easy maintenance as possible. I have conducted a field experiment in Vietnam since last year. This report presents results to date of this project.

2. Methods

1) Period: The end of Sep, 2015 ~ 20 Jan, 2016 (The experiment is now ongoing)
2) Location: B Purification Plant in Dong Nai Province, southern Vietnam
3) Water source: Dong Nai River (ref. Picture 1)
4) Flow diagram of water purification: (ref. Figure 1)
   (1) Purification capacity: 20m^3/day (Installation area: 4.0×15.0m, using steel plate, unit-type)
   (2) Coagulant injection rate: approximately 2.0~5.0 mg/L (in Al equivalent, using chemical injection pump)
   (3) Clarifier: using horizontal-flow and inclined plate settler
   (4) Primary filter: filter layer depth 500mm, anthracite
   (5) Slow sand filter: filter layer depth 500mm, sand

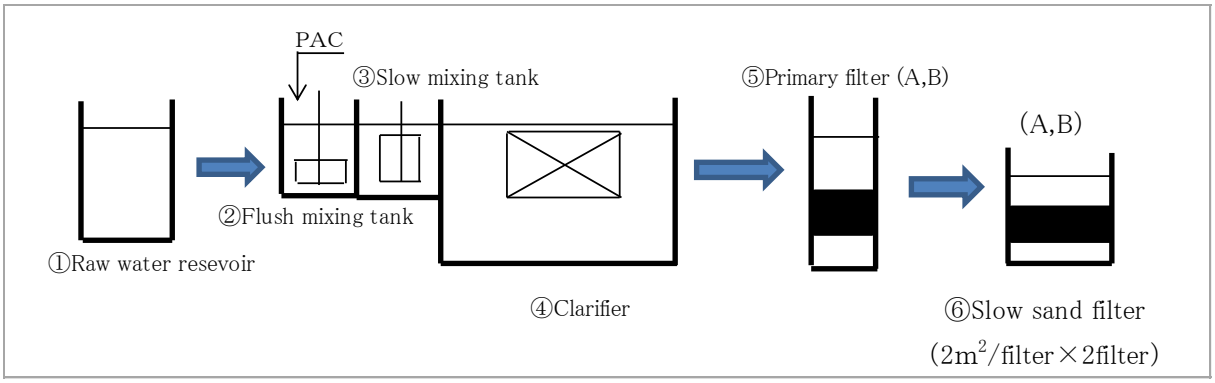


Figure 1. Flow diagram of water purification

3. Results

1) Turbidity (NTU)

Figure 2 shows turbidity (NTU) of raw water, settled water, primary filtrated water, slow filtrated water. Figure 3 shows turbidity (NTU) of slow filtrated water, and head loss of primary filter and slow sand filter.

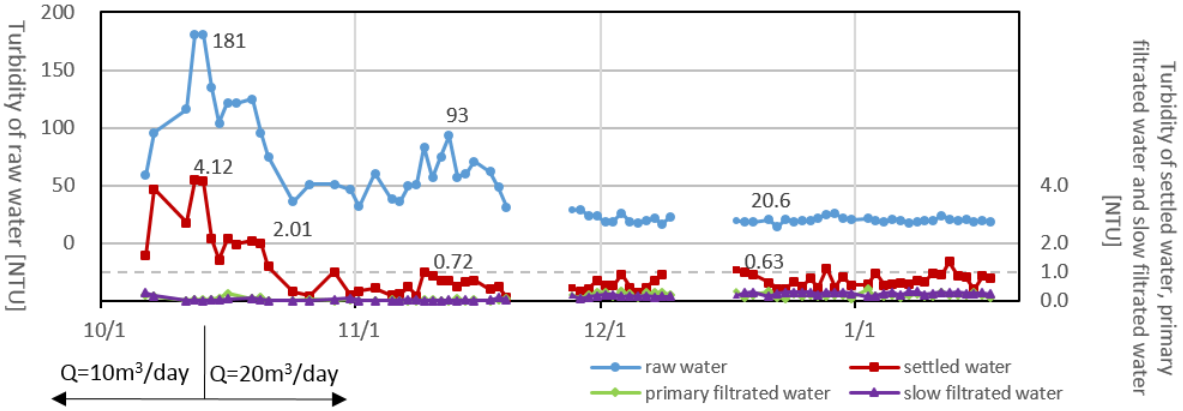


Figure-2. Turbidity of raw water and each treated water

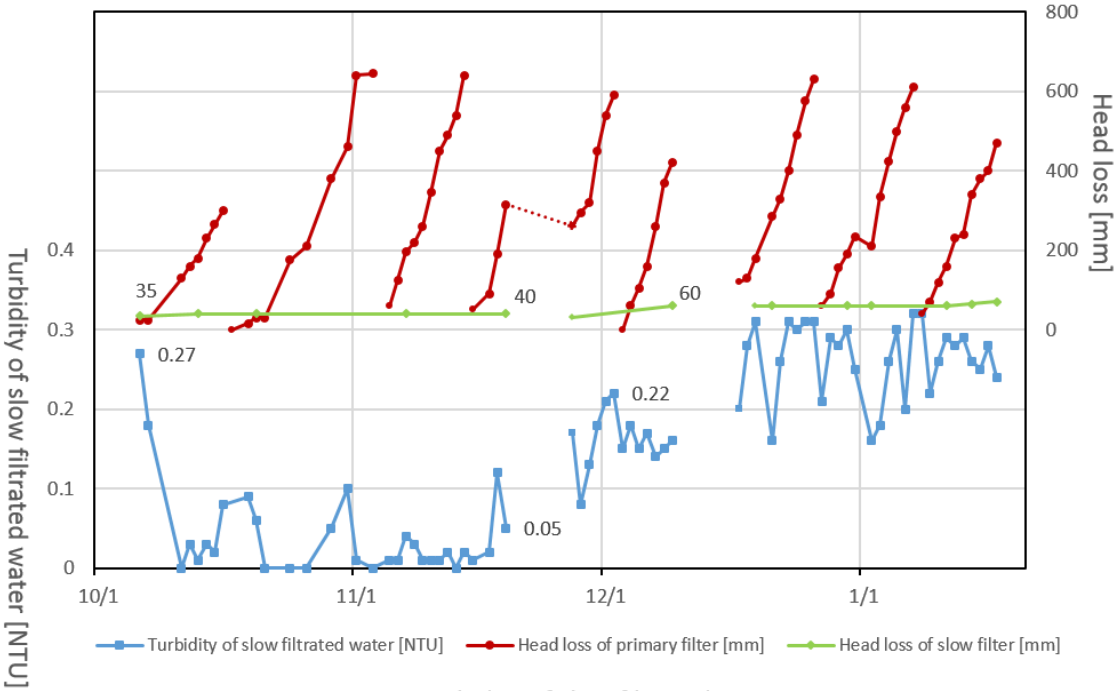


Figure-3 Turbidity of slow filtrated water
and Head loss of primary filter and slow filter

2) Other water quality parameters

Table 1 shows the values of NH_4-N, Fe and Mn in raw water and treated water. Dissolved oxygen is measured as reference.

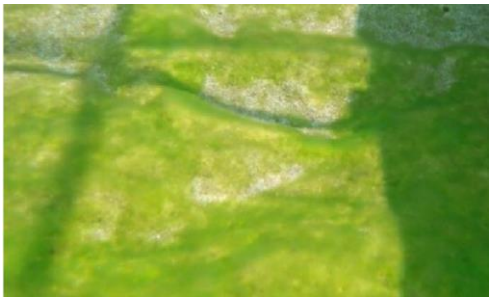
Table 1. Results of dissolved oxygen, NH_4-N, Fe and Mn

	Dissolved oxygen	NH_4-N	Fe	Mn	Turbidity [NTU]	Remarks
	mg/ℓ(-)	mg/ℓ(3)	mg/ℓ(0.3)	mg/ℓ(0.3)	(2)'	the values in () are the Vietnam water quality standards
Raw water	4.1	0.1	0.25	0.08	-	
Slow filterated water	4.1	0.04	<0.02	<0.01	-	the values of turbidity are shown in Fig 2
Tap water	-	0.05	0.23	0.03	0.41	measured in 28 Dec

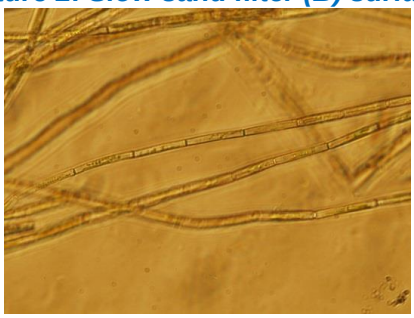
Annotation 1) The values of raw water and treated water are mean values in November and December.
Annotation 2) Tap water is collected from the faucet in B Purification Plant, which treated by coagulation-sedimentation and rapid filtration system.
Other water quality parameters based on the Vietnam water quality standards will be measured in public laboratory.

4. Conclusion

1) Turbidity of settled water was 1.0~4.0 NTU, due to inadequate coagulant injection in the first stage, but after that, it has been stabilized in less than 1.0 NTU.
   It should be noted that quantity of flow was set in 10m^3/day in the first week in order to bring up biofilm, and after that, it was set in 20m^3/day. (ref, Figure 2)
2) Turbidity of slow filtrated water had stabilized in less than 0.1 NTU for first 40 days, but after that, it has varied up to about 0.3 NTU.
3) Clogging of slow sand filter can be inhibited extremely by passing through primary filter. The filter media of the slow sand filter have never been scraped from the beginning until now, because of smallness of the rise of head loss.
   On the other hand, primary filter was clogged (i.e. head loss became more than 600mm) in about 10 days, so the surface of media had been scraped away in order to recover the filter ability.
4) In the case that settled water flow directly to the slow sand filter, the slow sand filter clogs rapidly in about 7 days.
5) Green algae began to grow in the slow sand filter surface from around November 10 (ref. Picture 2, 3). Water filtration has continued in this condition up to now (Jan 20).



Picture 2: Slow sand filter (B) surface



Picture 3: Microscope image of green algae

5. Future works

1) Turbidity of slow filtered water was raised from less than 0.1 to 0.2~0.3 NTU after about 1 month, and it has kept in the same level until now (Jan 20). I will examine the cause and solution (for example, frequency of scraping filter media).
2) I will consider the measures for effective improvement of the purification function by the biofilm in the slow sand filter.
3) I will make a comparative review for lower cost of equipment and efficient O&M by manual.
4) I will select new location of field experiment to confirm the adaptation of this system to other

different water quality. (Application will be started since this June.)

Acknowledgment

I would like to express my thanks for people who concern with B Purification Plant which kindly provide raw water and place of this experiment, and for people who concern with VINA TAK CO., LTD. which is a partner company of this project.

<Reference>

Design Criteria for Waterworks Facilities (2012, Japan Water Works Association (JWWA)

Mr. SAIKI from Matsuyama City Dispatch to Laos as JICA expert ! !

Mr. Takashi SAIKI who belongs to Water Supply Department, Public Corporation Bureau, Matsuyama City, was dispatched to the Laos MAWASU project (Capacity Development Project for Improvement of Management Ability of Water Supply Authority in LAO PDR) on February 8. Before leaving for Laos, he took the training for JICA expert at Tokyo for three weeks. Then, an interview was set on January 17.

Mr. Takashi Saiki

Q: What made you interested in international cooperation?

A: In my mid-twenties, I met a former JICA volunteer by chance. And he said "Mr. SAIKI! the world is so wide !" Then I had an interest in international cooperation. At that time, Matsuyama City established a system for dispatch of officials for JICA volunteer. I applied and became a volunteer as first case in Matsuyama City. I worked for making digital map as volunteer at Siem Reap, Cambodia, because water supply engineer was not requested. For two years, I lived in different cultural world. I met different kind of people. I went many places. And then, my view of life has been changed 180 degrees.

Q: You were awakened to international cooperation activity and returned to Japan. Didn't you want to be a JICA expert soon?

A: I thought I would go someday. However, before that, I thought I should experience technical works in Japan in order to improve my expertise.

Q: I agree with you. For working for the developing countries as an expert, it is very important to improve your ability of profession in Japan. I didn't know, but you are a type to do carefully.

A: I think so. My character may be cautious. But I boldly act what I want to do. I think that it has come from the blood of the grandmother.

Q: Why did you select water supply field as your job?

A: I studied agricultural engineering at the high school. So, to get a job in the waterworks bureau was a natural flow. After returning from Cambodia, I was assigned to the Division of Planning and Administration. I worked for formulating a water vision and for setting up the projects of measures against earthquake, water shortage and so on. And also I worked for the coordination with divisions concerned. I worked there for 4 years. At that time, I had a thought that I want to be an expert. However, I met a professor who researched geography by chance. I aimed to study at the graduate school. I studied the change of water demand and supply from the point of view of urban society geography and made the thesis. When I studied, I moved to the water distribution pipe center and worked for mapping. I had been there for 5 years. 4 years ago, I got the certificate for professional engineer. I also studied English.

Q: You accumulated learning and experience

steadily. And you got some certificates. It can be thought of as a careful preparation by integrating the learning and work. I met you in the training course of enhancing ability by JICWELS in November, 2011 firstly. And you joined to WaQuAC-NET. After that, I met you several times. My impression was jocular man. But, today, after interview, your image changed in 180 degree. That means Mr. Saiki is great person.

Persons who have experience of expert in developing countries are absolutely minority in the place of work. Therefore, they are not understood by colleagues. How about your case? In Matsuyama City local government, you are the first person who worked in developing country as JICA volunteer and also you will be a first person who become a JICA expert. So, I think most of people cannot understand you and they are cold to you.

A: No, my case is different. I am lucky to have good boss. I could go to the divisions which I had wanted to go. There were no group which formerly criticizes me. I prefer the self-growth than the promotion. Then, I think that such attitude was preferable for my boss.

Since I have been working as a civil servant for long time, I could work with thinking the importance of balance and coordination of surrounding environment in a office. For example, I always try to be inconspicuous.

Q: I think you are very conspicuous. (laugh)
At the end of last year, you applied to the recruitment of JICA expert and you were accepted. Initially, I heard that you were going to go even been quitted.

A: Yes, I thought. But, I had discussed with my boss about the participation to international cooperation project by many different ways since 2 years ago. But, we didn't have a system for dispatching staff as JICA expert in Matsuyama City. But, Public enterprise administrator said it is very interesting that person wants to quit civil servant in his forties. Such a person is valuable for Matsuyama City. You should return your experience to the City. And I could use self-development leave system and could go to Laos.

Q: He is a great boss!
Final question is what is your job in MaWaSu Project in Laos.

A: Project period is 5 years. It started in 2012. So, I will work in final one year and seven months. I think that I will summarize previous activities that other short-term experts trained Laos counterparts for enhancing management ability of water utilities by OJT. And I will work for setting the foundation of the nationwide deployment. Specifically, I'll work according to the instructions of the leader, Mr. Shimomura. I want to concentrate 120% on project work.

Q: Laos is the most popular country in experts, because people are very nice and food is delicious. Please do your best. JICA expert was your dream and dream came true. We look forward to your success.

Impression after interview

Mr. Saiki moves at full tilt towards his target.
He is the owner of good character which was born with him. He is polite, does not make enemies. But he can say clearly that he wants to say. He is a hard worker as well. I can understand why the administrator said him "You should return to Matsuyama City". I hope that he contribute in the project by his experience and ability which have been cultivated until now.

＊MaWaSu Project in Laos is introduced on WaQuAC-NET Newsletter vol.24

(Yamamoto, WaQuAC-NET Office)

Report of 2016 WaQuAC-NET General Meeting

Date; 01 March 2016
Place; Shinjyuku, Tokyo
Attendance; Mr. Sasaki, Mr. Ariumura, Mr. Takebe, Mr. Ono, Ms. Kamegai, Ms. Maeda, Ms. Yamamoto, Ms. Yariuchi

Activity and accounting reports in 2015 were reviewed, and activity plan in 2016 was discussed.

The information shares by all members separately. Activity and accounting reports in 2015 were approved by the attending members. Success of the second Osaka meeting in September and the presentation by Ms. Sivilai at the National Waterworks Conference were two remarkable events in 2015. Numbers of 2015 year-end Member are followings; 65 Japanese individual memberships, 1 corporation membership, and 55 abroad individual memberships.

Activity plan in 2016 was also agreed by the attending members. Newsletters will be regularly published quarterly in Japanese and English. We highly appreciate your contribution and English translation assistance. We also plan to have following mini-meetings and events; A welcome party for the previous president of PPWSA (Cambodia) coming to Japan and a farewell party for Ms. Yariuchi to Myanmar in April, the 10th mini-meeting on water supply and drinking water in Africa in June, the 8th Kyushu General Meeting in July, the 3rd Osaka Meeting, support to an abroad member (Thailand) to make a presentation at the National Waterworks Conference in November and other welcome and farewell parties. As we will inform the detailed schedule of the events as soon as possible, please participate heartily.

Regarding monitoring activities on the subsequent status of the Great East Japan Earthquake that passed 5 years on this month, it was confirmed that WaQuAC-NET continues its activity from the view point of water supply. It should be taken up as the topic "great earthquake disaster response and reconstruction" for the follow-up of the third Asian executive forum.

Dispatch of an expert is planned in April or May for algae problems related to water treatment in Thailand and Cambodia.

Questionnaires survey on overseas members will be carried out by Japanese members who go to Thailand and Vietnam.

WaQuAC-NET started it activities in December, 2008 and 8 years have already passed. We appreciate for your continuous supports and active participations.

In the latter part of the meeting, Mr. Takeuchi reported the progress of his demonstration experiment on purification units and the attended members exchanged their views on his report. Please see the details of the report and discussion in this newsletter.

It was great to have very fruitful and serious discussions from the start to the end of the General Meeting owing to a calm meeting place. Thank you very much for attending to the General Meeting!（By Yariuchi）

(from left) Kamegai, Maeda, Yamamoto, Yariuchi, Arimura, Sasaki, Takebe, Ono

♪♪♪♪ Event ♪♪♪♪

Ms. Siti Zainab Farewell Party

Date: Feb. 21, 2016

Place: Yokohama・ARABIC Restaurant "AL AIN"
Participants: from left Mr. Karam, Mr. Inoue, Mr. Sasaki, Ms. Zainab, Ms. Yamamoto

Since last September, Ms. Siti Zainab Lubis has been taking the Kanagawa Overseas Technical Training Course for six months and half. She has left her husband, a son and daughter in Indonesia. Her stay in Japan was now less than one month. She will go back homeland on March 12. I asked her "What was most impressive thing in Japan?" She said that Japanese always lined up anywhere patiently. It never happens in Medan, Indonesia. She said It was so hard to commute long way every day, but, training was so useful.
Her husband came to Japan in January. And he enjoyed differences of culture. We talked about the culture of Sumatra island where she lived. There are many different ethnic groups. Her ancestor was a king of certain group. At her wedding, she wore wedding dress which was handed down from her mother. It was so heavy. Our topics were various. It was so enjoyable time. At that time, many members had gone to abroad. So, they couldn't join the party. But, we enjoyed talking with Ms. Zainab and tasted Arabic cuisine which cooked by Mr. Ziad D. Karam, owner chef from Lebanon.

Ms. Zainab, please come again !

（by Yamamoto

Introduction of new members

- **Mr. Yasuo KOBAYASHI（Japan）**
- **Mr. Kot Nimol (Cambodia)**
- **Ms. Seang Ravy (Cambodia)**
- **Mr. Touch Ratha (Cambodia)**
- **Mr. Chhut Monorom (Cambodia)**
- **Ms. Chheang Polen (Cambodia)**

We welcome new members anytime
Please contact us

WaQuAC-NET Newsletter Vol.28
Issued on April 10, 2016

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Next Activity

Mid May	Dispatch expert
June 10	Newsletter 29 in Japanese
Mid-June	Mini-meeting "Water Supply in Africa"
July 10	Newsletter 29 in English
Late July	Meeting in Kyushu