

# High Rate Filtration System & Advanced Energy Saving Wastewater Treatment System (Pre-treated Trickling Filter System)

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October 2023  
**METAWATER Co., Ltd.**  
International Sales & Marketing Department  
International Business Division

## 1. Corporate Overview

## 2. High Rate Filtration System (HRFS)

- I. Effects of HRFS
- II. Specification
- III. Installation Record

## 3. Pre-treated Trickling Filter System (PTF)

- I. Background and system flow of PTF
- II. Advantage points of PTF
- III. Installation Record



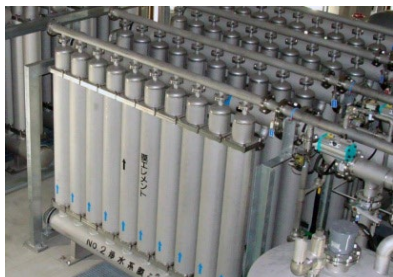
# Corporate Overview



**METAWATER** is a leading engineering company with unique products and wide range of experiences from product supply, EPC up to O&M service **incl. PPP projects.**

Capital	JPY 11.9 Bil. (ca. US\$ 83 Mil.)
Stock Market	Prime Market of Tokyo Stock Exchange (Code:9551)
Net Sales	JPY 150 Bil. (ca. US\$ 1.04 Bil.)
Employees	3,496 (consolidated)
Location (JPN)	Tokyo (Head Office), Hino Office, Nagoya Office
(Intl.)	Vietnam, Cambodia, Switzerland, Germany, The Netherlands, USA

## Ceramic Membrane



## Ozone Generator



## High Rate Filtration System



## PTF System



**High Rate Filtration System(HRFS) & Pre-treated Trickling Filter system(PTF)**  
can contribute to your **Smart Energy, Smart Governance, Smart Economy, and Smart Living** etc...



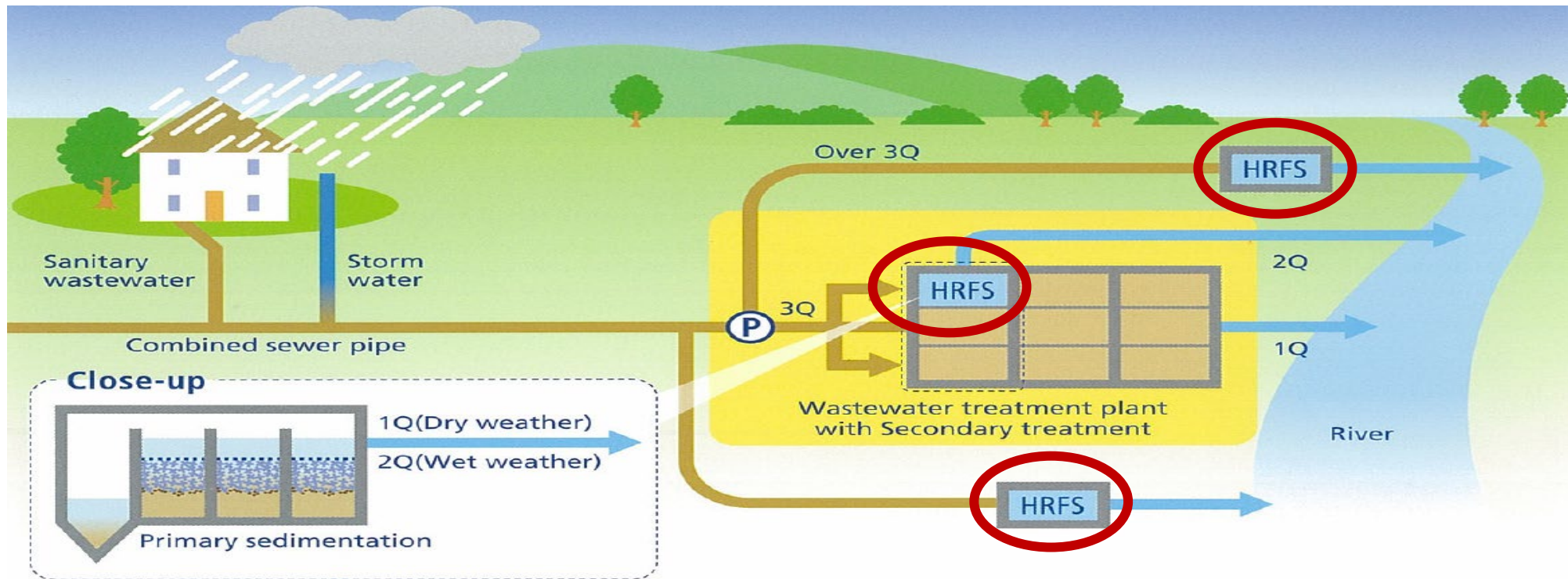


# High Rate Filtration System (HRFS)



*CSO ( Combined Sewer Overflow ) water quality has to be improved.*

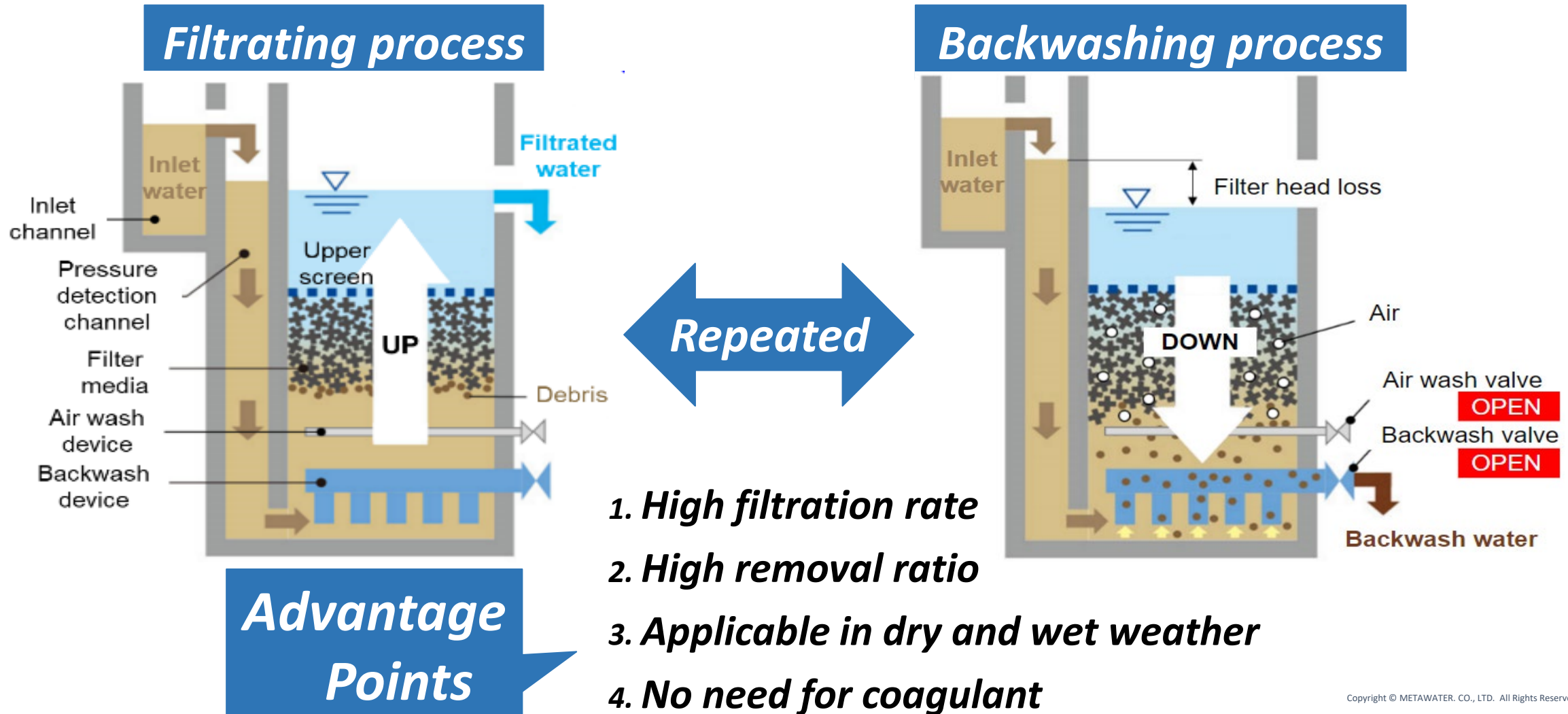
- (1) Pollutant load must be reduced
- (2) The number of directly discharge must be reduced
- (3) Debris must be reduced





## < HRFS design features >

### UP FLOW FILTRATION BY FLOATING FILTER MEDIA






## 56 installations as of Oct. 2023

\*Including confirmed future plan

<b>CSO Treatment</b> Currently under Construction
<b>Vietnam Hanoi city</b> (Yen Xa Sewerage System Project)




<b>Primary clarifier alternative</b>

Osaka city (Nakahama WWTP Chishima WWTP Ebie WWTP)

<b>CSO treatment</b>


Niigata city


Morioka city


Minamisoma city

<b>CSO treatment</b>

Numazu city


Tokyo





# Pre-treated Trickling Filter System (PTF)



# What's the PTF including developing background

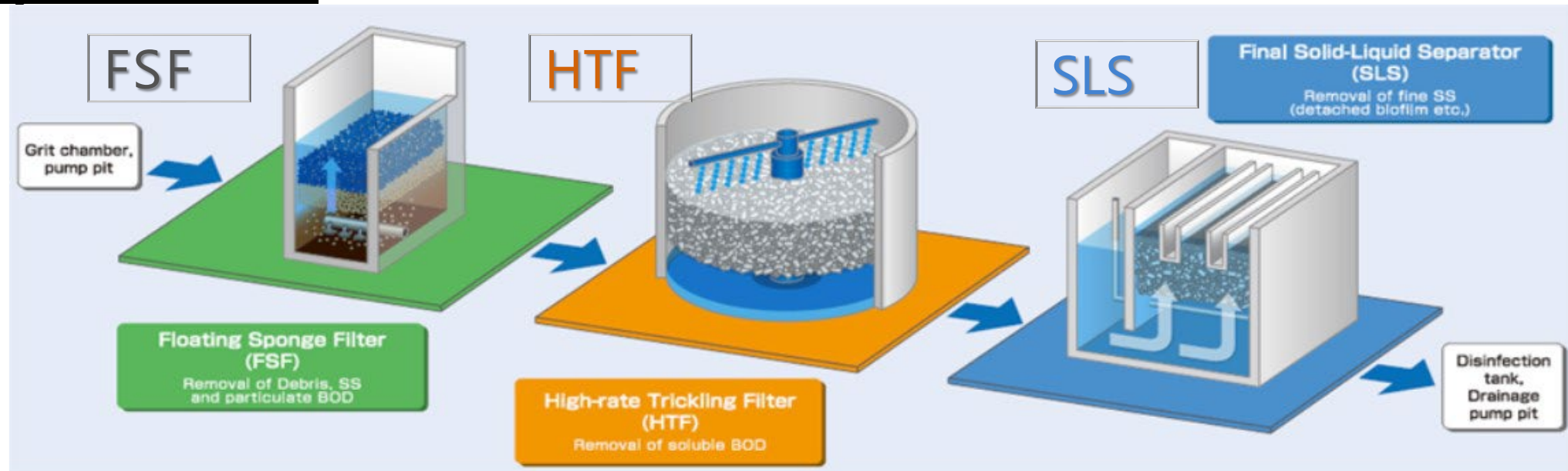
## ■ Pre-treated Trickling Filter System : PTF

The main concepts are **saving energy, space, and easy maintenance.**



This is the **first technology** that acquired the “**Overseas Use Technology Verification**” conducted by the Japan Sewage Works Agency **in 2014.**

## ■ System Flow



# Advantage points of PTF

1

## *Provides Good and Stable Treated Water Quality*



Whole system removal ratio

SS **90 %**, BOD **90 %**

2

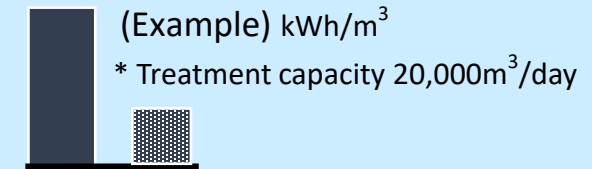
## *Improved adaptability to a wide range of water volumes, and high adaptability to the expanding deployment*

- It is also possible to reduce design costs when introducing this system in other districts by diverting the standardized systems.

3

## *Low power consumption by energy conservation*

- **75 % reduction** compared to the conventional activated sludge process (CAS)



4

## *Compact Footprint: Highly efficient processing*

- **1/2** the installation area compared to the conventional activated sludge process (20,000 m<sup>3</sup>/day)

5

## *The system configuration uses the differential head, which reduces the operational burden.*

- **Fully automated system** in which the processes are naturally processed by using the water head difference.
- **No need for skilled personnel** (operators)

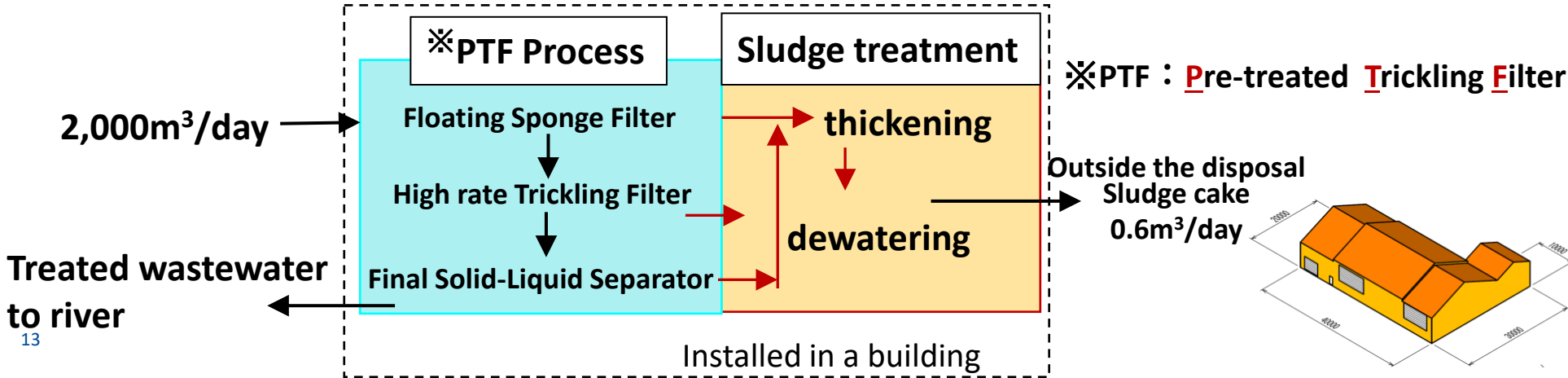
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## *Highly flexible facility layout*

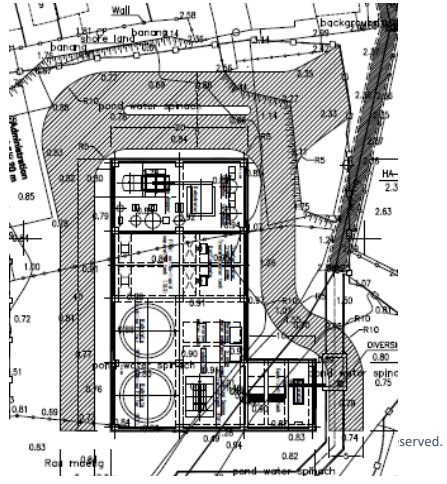
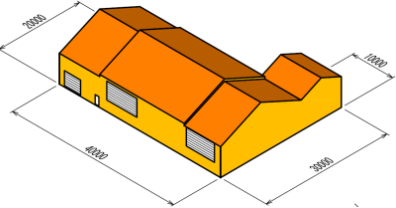
- Adaptable to the surrounding environment
- PTF can be covered outdoors or inside a building (optional)

## Adoption determination of ODA grant for Hoi An City(Dec. 2016)

Project name	The Project for Water Quality Improvement for Japanese Bridge Area in Hoi An City
Overview of the project	Construction of new wastewater treatment plant of 2,000m <sup>3</sup> /day Existing waterway repairing (1.6km) Unit trial operation (Instruction of O & M)
Schedule	< Terms of work > Construction work : 18 month + Instruction of O&M after equipment delivery : 6 months



※PTF : Pre-treated Trickling Filter



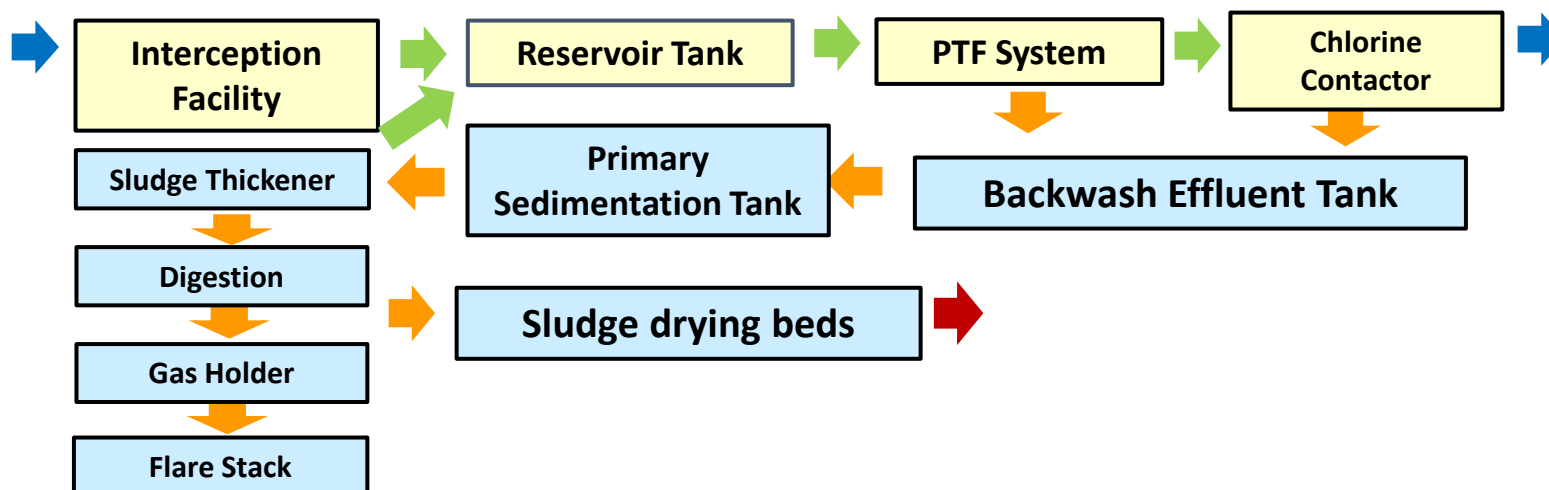


# The Project for Sewerage System Development in Phnom Penh

(Under Construction)

## Adoption determination of ODA grant for DPWT PPCA(Nov. 2019)

<b>Project name</b>	Project for Sewerage System Development in Phnom Penh
<b>Overview of the project</b>	Construction of new wastewater treatment plant of 5,000m <sup>3</sup> /day (Treatment System : Pre-treated Trickling Filter (PTF) System) New water conveyance pipe (1.9km)
<b>Schedule</b>	< Terms of work > Construction work 31.5 months (* Completion → Nov 15. 2023)



*Thank you for your attention.*



**METAWATER**

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