

Major Undertakings to be taken by the Royal Government of Cambodia

1. Specific obligations of the Royal Government of Cambodia which will not be funded with the Grant**(1) Before the Bidding**

No	Items	Deadline	In charge	Estimated Cost (USD)	Ref.
1	To open bank account (B/A)	within 1 month after the signing of the G/A	PPWSA	-	
2	To issue A/P to a bank in Japan (the Agent Bank) for the payment to the consultant	within 1 month after the signing of the contract(s)	PPWSA	-	
3	To bear the following commissions to the Agent Bank for the banking services based upon B/A				
	1) Advising commission of A/P	within 1 month after the signing of the contract(s)	PPWSA/ NBC	50	
	2) Payment commission for A/P	every payment	PPWSA/ NBC	1,500	
4	To approve IBIA/EIA(Conditions of approval should be fulfilled, if any) and secure the necessary budget for implementation.	within 1 month after the signing of the G/A	PPWSA	-	
5	To notice the construction of the intake facility in the Bassac River to local authorities.	before notice of the bidding document(s)	PPWSA	-	
6	To secure, clear, level and reclaim the following lands/sites * 1) Site for Ta Khmau WTP	before notice of the bidding document(s)	PPWSA	-	
7	To explore landmines and UXO at construction site	before notice of the bidding document(s)	PPWSA	25,000	
8	To obtain water right for intake from the Bassac River from MOWRAM	before notice of the bidding document(s)	PPWSA	-	
9	To demolish and transfer the existing tariff collection office	before notice of the bidding document(s)	PPWSA	61,000	

(B/A: Banking Arrangement, A/P: Authorization to pay, N/A: Not Applicable)

NBC: National Bank of Cambodia

(2) During the Project Implementation (during EPC)

NO	Items	Deadline	In charge	Estimated Cost	Ref.
1	To issue A/P to a bank in Japan (the Agent Bank) for the payment to the Supplier(s)	within 1 month after the signing of the contract(s)	PPWSA	-	
2	To bear the following commissions to a bank in Japan for the banking services based upon the B/A				
	1) Advising commission of A/P	within 1 month after the signing of the contract(s)	PPWSA/ NBC	600(in total)	
	2) Payment commission for A/P	every payment	PPWSA/ NBC	30,000(in total)	
3	to ensure prompt unloading and customs clearance at ports of disembarkation in the country of the Recipient and to assist the Supplier(s) with internal transportation therein	during the Project	PPWSA	-	
4	To accord Japanese physical persons and/or physical persons of third countries whose services may be required in connection with the supply of the products and the services such facilities as may be necessary for their entry into Cambodia and stay therein for the performance of their work	during the Project	PPWSA	-	
5	To ensure that customs duties, VAT, internal taxes and other fiscal levies which may be imposed on prime contractors and subcontractors in Cambodia with respect to the purchase of the products and/or the services be exempted by its designated authority without using the Grant;	during the Project	MEF	-	
6	To bear all the expenses, other than those covered by the Grant, necessary for the implementation of the Project	during the Project	PPWSA	-	
7	To notify JICA promptly of any incident or accident, which has, or is likely to have, a significant adverse effect on the environment, the affected communities, the public or workers.	during the construction	PPWSA		
8	1) To submit Project Monitoring Report	every month	PPWSA	-	
	2) To submit Project Monitoring Report (final)	within one month after signing of Certificate of Completion for the works under the contract(s)	PPWSA	-	
9	To submit a report concerning completion of the Project	within six months after completion of the Project	PPWSA	-	
10	To provide facilities for distribution of electricity, water supply and drainage and other incidental facilities necessary for the implementation of the Project outside the site(s)		PPWSA	-	
	1) Electricity Construction of utility poles and wiring work including conduit from the power receiving point to the transformer, procedures for receiving power, and procedures for receiving two lines.	before start of the construction		5,000	
	2) Drainage The city drainage main (for storm, sewer and others) to the site	before start of the construction			



11	To take necessary measure for safety of construction - Coordination with the police for traffic control - Coordination with relevant authority to ensure the safety of boats and ships in relation to the construction of intake facility	during the construction	PPWSA	-	
12	To implement EMP and EMoP	during the construction	PPWSA	31,250	
13	To submit results of environmental monitoring to JICA, by using the monitoring form, on a quarterly basis as a part of Project Monitoring Report	during the construction	PPWSA	-	
14	To provide sufficient space in Niroth WTP and PPWSA's land in Kampong Samnanh Village in Ta Khmau city as a stockyard and office space for free of charge	during the construction	PPWSA	-	

(3) During O&M

NO	Items	Deadline	In charge	Estimated Cost	Ref.
1	To implement EMP and EMoP	for a period based on EMP and EMoP	PPWSA		
2	To submit results of environmental monitoring to JICA, by using the monitoring form, semiannually - The period of environmental monitoring may be extended if any significant negative impacts on the environment are found. The extension of environmental monitoring will be decided based on the agreement between PPWSA and JICA.	for three years after the commissioning	PPWSA		
3	To extend distribution network and facilitate the service connections.	for the O&M period	PPWSA		
4	To comply strictly with the O&M contract	for the O&M period	PPWSA		
5	To extract sludge from WTP and dispose it	for the O&M period	PPWSA		

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Project Monitoring Report
on
the Project for Expansion of Water Supply System in Ta Khmau
Grant Agreement No. XXXXXXXX
20XX, Month

Organizational Information

Signer of the G/A (Recipient)	Person in Charge (Designation) _____ Contacts _____ Address: _____ Phone/FAX: _____ Email: _____
Executing Agency	Person in Charge (Designation) _____ Contacts _____ Address: _____ Phone/FAX: _____ Email: _____
Line Ministry	Person in Charge (Designation) _____ Contacts _____ Address: _____ Phone/FAX: _____ Email: _____

General Information:

Project Title	<i>Expansion of Water Supply System in Ta Khmau</i>
E/N	Signed date: Duration:
G/A	Signed date: Duration:
Source of Finance	Government of Japan: Not exceeding JPY _____ mil. Government of (_____): _____

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1: Project Description	
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1-1 Project Objective

The project aims to achieve the objectives as follows; 1)Construct a water treatment plant (30,000m³ / day) for water distribution to Ta Khmau City and the surrounding area; 2) Improving water supply services, and 3)Contribute to improving the living environment in Ta Khmau and Phnom Penh.

1-2 Project Rationale

- Higher-level objectives to which the project contributes (national/regional/sectoral policies and strategies)
- Situation of the target groups to which the project addresses

The National Strategic Development Plan, issued by the Royal Government of the Kingdom of Cambodia (RGC) in 2006 and reviewed in 2008, aims to boost access to safe water in urban areas to 80% by 2015 and 100% by 2025.

Development of water supply in the country started in the mid-1990s, mainly in the capital city of Phnom Penh. JICA conducted the Study on Phnom Penh Water Supply System in 1993. With the support of the Government of Japan (hereinafter referred to as "GOJ") and other donors, water supply capacity in Phnom Penh has improved through the construction and rehabilitation of facilities and capacity building for operation and maintenance. Now, Phnom Penh has a service ratio of over 90 % for 24-hour water supply. Water supply is still inadequate in the surrounding areas because production capacity is not keeping up with the rapid increase in domestic and commercial demand. The expansion of water supply facilities is urgently needed.

Ta Khmau city is part of Kandal province and located south of Phnom Penh city. Public water had been supplied mainly from the Bassac river and wells within Ta Khmau city. At present, water is supplied directly through distribution pipes connected to the Phnom Penh system, which is operated by the Phnom Penh Water Supply Authority (hereinafter referred to as "PPWSA"). PPWSA was instructed to do so in 2004 by RGC due to the growing population and water quality problems (e.g. arsenic has been detected in multiple wells).

There are many low-income households in the area, and PPWSA takes measures to provide free connections and lower water tariffs.

1-3 Indicators for measurement of "Effectiveness"

Quantitative indicators to measure the attainment of project objectives		
Indicators	Original (Yr 2015)	Target (Yr 2027)
Daily Average Water Supply Volume	11,440 m ³ / day	30,000 m ³ /day
Qualitative indicators to measure the attainment of project objectives		
1. Increase of Service Ratio		
2. Expansion of Service Area		
3. Increase of Water Supply Volume		
4. Increase of Water Pressure		
5. Increase of Service Connection of Low Income Group		

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| 6. Sustainment of Special Measurement against Low Income Group on Water Supply |
| 7. Technology Transfer |

2: Details of the Project

2-1 Location

Components	Original <i>(proposed in the outline design)</i>	Actual
1.	Attachment 1: Map	

2-2 Scope of the work

Components	Original* <i>(proposed in the outline design)</i>	Actual*
1. Intake and Raw Water Transmission Facilities	- Intake Capacity : 33,000 m3/day - Raw Water Intake Tower - Raw Water Transmission Facility	
2. Water Treatment Facility	- Water Treatment Capacity : 30,000 m3/day - Water Treatment Facility	
3. Distribution Facilities	- Clear Water/Service Reservoir - Distribution Equipment - Bulk Meter (Count: 1)	
4. SCADA	- Central Supervisory System in the WTP	
5. Consulting Service	- Tender Assistance - Design Confirmation - Construction and Procurement Supervision - Support for O&M, and monitoring system	

Reasons for modification of scope (if any).

(PMR)

2-3 Implementation Schedule

Items	Original		Actual
	<i>(proposed in the outline design)</i>	<i>(at the time of signing the Grant Agreement)</i>	
E/N	Mar 2020		
G/A	Mar 2020		
PQ Announcement	May 2020		
Tender Announcement	July 2020		
Signing of Contract	Mar. 2021		
Completion of EPC	Dec 2023		
Defect Liability Date	Dec 2024		

Completion of O&M	Dec 2033		
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Reasons for any changes of the schedule, and their effects on the project (if any)

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2-4 Obligations by the Recipient
2-4-1 Progress of Specific Obligations
See Attachment 2.

2-4-2 Activities
See Attachment 3.

2-4-3 Report on RD
See Attachment 11.

2-5 Project Cost

2-5-1 Cost borne by the Grant(Confidential until the Bidding)

Components			Cost (Million Yen)	
	Original (proposed in the outline design)	Actual (in case of any modification)	Original ^{(1),(2)} (proposed in the outline design)	Actual
EPC	1. EPC			
Consulting Service	EPC Supervision			
Contingencies				
Total				

Note: 1) Date of estimation:
2) Exchange rate: 1 US Dollar = Yen

2-5-2 Cost borne by the Recipient

Components			Cost (1,000 KHR)		Cost (Million JPY)	
	Original (proposed in the outline design)	Actual (in case of any modification)	Original ^{(1),(2)} (proposed in the outline design)	Actual	Original ^{(1),(2)} (proposed in the outline design)	Actual
Land preparation for WTP construction	1. Land preparation of WTP site		0			
	2. Relocation of tariff collection office		61,000			
Electrical Work	Cost for two-line power receiving such as procedures, construction.		5,000			
Unexploded or	Cost for		25,000			

mine survey	construction work for the primary side power receiving facility for water intake and WTP					
Environmental and social considerations	Expenses for investigating in advance whether there are unexploded bombs and landmines etc		31,250			
Banking fee	Environmental impact monitoring costs (2021-2024)				3.3	
			122,250		3.3	

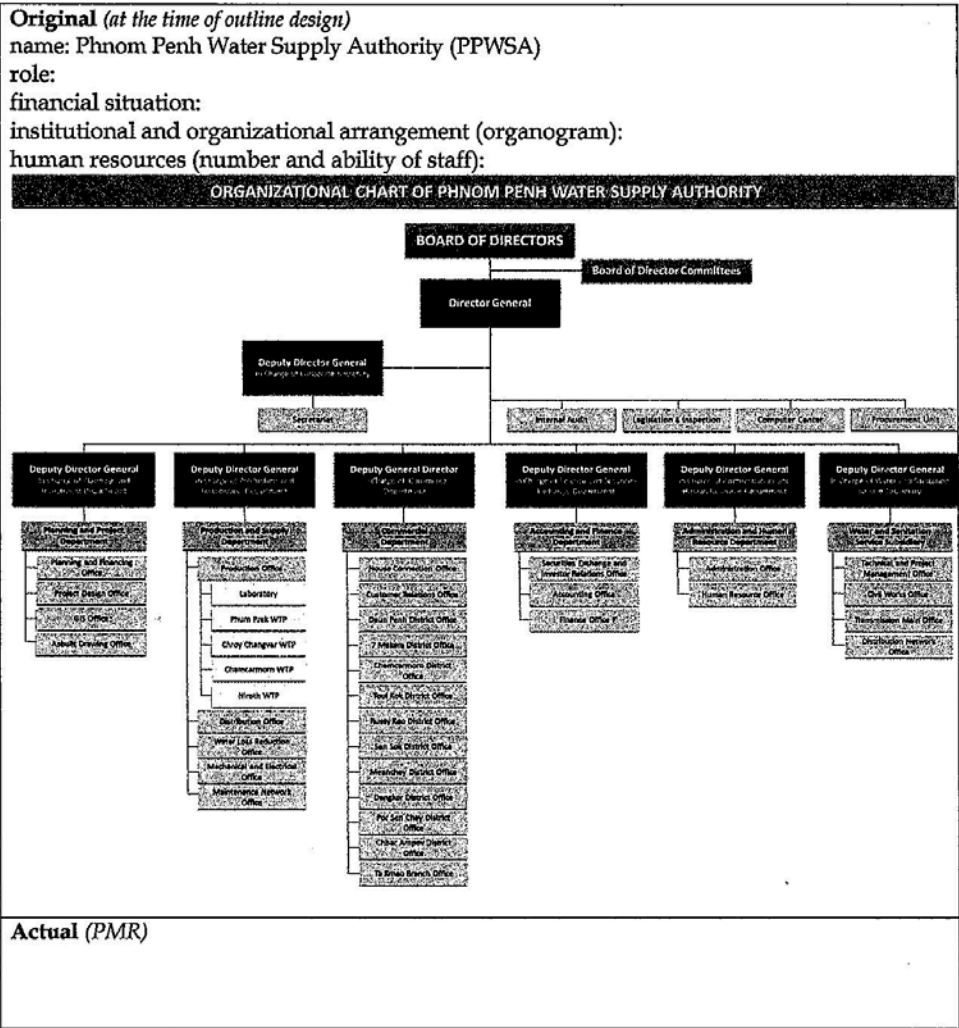
Note: 1) Date of estimation: April, 2019
 2) Exchange rate: 1 US Dollar = 111.21, 1 KHR = 0.026 JPY

Reasons for the remarkable gaps between the original and actual cost, and the countermeasures (if any)

(PMR)

2-6 Executing Agency

- Organization's role, financial position, capacity, cost recovery etc,
- Organization Chart including the unit in charge of the implementation and number of employees.



2-7 Environmental and Social Impacts

- The results of environmental monitoring based on Attachment 5 (in accordance with Schedule 4 of the Grant Agreement).
- The results of social monitoring based on in Attachment 5 (in accordance with Schedule 4 of the Grant Agreement).
- Disclosed information related to results of environmental and social monitoring to local stakeholders (whenever applicable).

3: Operation and Maintenance (O&M)

3-1 Physical Arrangement

- Plan for O&M (number and skills of the staff in the responsible division or section, availability of manuals and guidelines, availability of spareparts, etc.)

Original (at the time of outline design)
Actual (PMR)

3-2 Budgetary Arrangement
 - Required O&M cost and actual budget allocation for O&M

Original (at the time of outline design)
Actual (PMR)

4: Potential Risks and Mitigation Measures

- Potential risks which may affect the project implementation, attainment of objectives, sustainability
- Mitigation measures corresponding to the potential risks

Assessment of Potential Risks (at the time of outline design)

Potential Risks	Assessment
1. Long wet period and high river water level	Probability: High/Moderate/Low
	Impact: High/Moderate/Low
	Analysis of Probability and Impact: It shall be unforeseen case. if construction of intake is delayed, completion of overall construction will be delayed.
	Mitigation Measures: Extension of construction period
	Action required during the implementation stage:
	Contingency Plan (if applicable):
2. Deterioration of raw water quality	Probability: High/Moderate/Low
	Impact: High/Moderate/Low
	Analysis of Probability and Impact: Unforeseen contents may be contained in raw water which effect to treatment process.
	Mitigation Measures: Modification of treatment process.
	Action required during the implementation stage:

	Contingency Plan (if applicable):
3. Time takes long at commencement of works	Probability: High/Moderate/Low
	Impact: High/Moderate/Low
	Analysis of Probability and Impact:
	Approval or permission takes long time to establish entity at commencement of EPC effect overall construction period.
	Mitigation Measures:
	Extension of construction period
	Action required during the implementation stage:
	Contingency Plan (if applicable):
Actual Situation and Countermeasures	
(PMR)	

5: Evaluation and Monitoring Plan (after the work completion)

5-1 Overall evaluation

Please describe your overall evaluation on the project.

5-2 Lessons Learnt and Recommendations

Please raise any lessons learned from the project experience, which might be valuable for the future assistance or similar type of projects, as well as any recommendations, which might be beneficial for better realization of the project effect, impact and assurance of sustainability.

5-3 Monitoring Plan of the Indicators for Post-Evaluation

Please describe monitoring methods, section(s)/department(s) in charge of monitoring, frequency, the term to monitor the indicators stipulated in 1-3.

Attachment

1. Project Location Map
 2. Specific obligations of the Recipient which will not be funded with the Grant
 3. Monthly Report submitted by the Consultant
- Appendix - Photocopy of Contractor's Progress Report (if any)
- Consultant Member List
 - Contractor's Main Staff List
4. Check list for the Contract (including Record of Amendment of the Contract/ Agreement and Schedule of Payment)
 5. Environmental Monitoring Form / Social Monitoring Form
 6. Monitoring sheet on price of specified materials (Quarterly)
 7. Report on Proportion of Procurement (Recipient Country, Japan and Third Countries) (PMR (final) only)
 8. Pictures (by JPEG style by CD-R) (PMR (final) only)
 9. Equipment List (PMR (final) only)
 10. Drawing (PMR (final) only)
 11. Report on RD (After project)

Monitoring sheet on price of specified materials

1. Initial Conditions (Confirmed)

Items of Specified Materials	Initial Volume A	Initial Unit Price (¥) B	Initial total Price C=A×B	1% of Contract Price D	Condition of payment Price (Increased) F=C+D
Item 1	●●t	●	●	●	●
Item 2	●●t	●	●	●	
Item 3					
Item 4					
Item 5					

2. Monitoring of the Unit Price of Specified Materials

(1) Method of Monitoring : ●●

(2) Result of the Monitoring Survey on Unit Price for each specified materials

Items of Specified Materials	1st month, 2015	2nd month, 2015	3rd month, 2015	4th	5th	6th
Item 1	●	●	●			
Item 2						
Item 3						
Item 4						
Item 5						

(3) Summary of Discussion with Contractor (if necessary)

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Report on Proportion of Procurement (Recipient Country, Japan and Third Countries)
 (Actual Expenditure by Construction and Equipment each)

	Domestic Procurement (Recipient Country) A	Foreign Procurement (Japan) B	Foreign Procurement (Third Countries) C	Total D
Construction Cost	(A/D%)	(B/D%)	(C/D%)	
Direct Construction Cost	(A/D%)	(B/D%)	(C/D%)	
others	(A/D%)	(B/D%)	(C/D%)	
Equipment Cost	(A/D%)	(B/D%)	(C/D%)	
Design and Supervision Cost	(A/D%)	(B/D%)	(C/D%)	
Total	(A/D%)	(B/D%)	(C/D%)	

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Environmental Checklist		Confirmation of Environmental Considerations (Reasons, Mitigation Measures)	Yes/No	Main Check Items	Yes/No
Category	Environmental Item				
1. Permits and Explanation	(1) EIA and Environmental Permits	(a) Initial Environmental Impact Assessment (IEIA) report has been prepared and submitted to Ministry of Environment (MoE) in the end of August, 2019.	Y	(a) Have EIA reports been already prepared in official process?	Y
		(b) The IEIA report is currently under review by MoE. It is expected that MoE will issue approval letter on the IEIA report by the end of November, 2019.	N	(b) Have EIA reports been approved by authorities of the host country's government?	N
		(c) The IEIA report is currently under review by MoE.	N	(c) Have EIA reports been unconditionally approved? If conditions are imposed on the approval of EIA reports, are the conditions satisfied?	N
		(d) In addition to the above approvals, a permit for water intake is required. On Sep. 12, 2019, approval letter for the water extraction right was issued by Cambodia National Mekong Committee (CNMCC) signed by Chief of Committee, H.E. LIM Kean Hor (Minister of Water Resources and Meteorology).	N	(d) In addition to the above approvals, have other required environmental permits been obtained from the appropriate regulatory authorities of the host country's government?	N
	(2) Explanation to the Public	(a) Stakeholder consultation meetings were held in Derm Mien Village on June 22, 2019 and in Kandal Provincial Department of Environment (DoE) on July 18, 2019. During the meetings, the project contents and the potential impacts are explained to the local stakeholders. Understanding was obtained from the local stakeholders considering the discussion and comments collected from them during the meetings. In addition, information disclosure has been also carried out through local authorities and NGOs.	Y	(a) Have contents of the project and the potential impacts been adequately explained to the Local stakeholders based on appropriate procedures, including information disclosure? Is understanding obtained from the local stakeholders?	Y
		(b) Local residents required to increase house connection, regular water supply, appropriate water tariff and lower price of house connection. These comments and requirements have been reflected in the project design (increasing service population from current 48,000 to 120,000, providing 24 hours water supply, providing subsidized connections and tariff for low income households).	Y	(b) Have the comment from the stakeholders (such as local residents) been reflected to the project design?	Y
	(3) Examination of Alternatives	(a) Three alternative studies (without project, conventional treatment and advanced treatment) have been examined. In order to avoid land acquisition and resettlement, conventional treatment method is selected.	Y	(a) Have alternative plans of the project been examined with social and environmental considerations?	Y
		(b) On-site sodium hypochlorite generation system with high safety will be applied. Therefore, chlorine gas will not be used in the WTP and leakage of chlorine is not expected.	N	(b) Is there a possibility that chlorine from chlorine storage facilities and chlorine injection facilities will cause air pollution?	N
2. Mitigation Measure	(1) Air Quality	(a) On-site sodium hypochlorite generation system, the disinfectant is produced and stored in liquid form. Therefore, there is no danger of gas leaks from high-pressure chlorine cylinders. In addition, in Cambodia there are no regulations on chlorine concentrations within working environments.	Y	(b) Do chlorine concentrations within the working environments comply with the country's occupational health and safety standards?	Y

Category	Environmental Item	Main Objectives	Yes-Y No-N	Confirmation of Environment (Considerations (Reasons/Mitigation Measures))
	(2) Water Quality	(a) Do pollutants, such as SS, BOD, COD contained in effluents discharged by the facility operations comply with the country's effluent standards?	Y	(a) During construction period: Domestic wastewater generated from construction site at Ta Khmau WTP will be discharged into existing sewerage system. During operation period: Wastewater from the WTP administration building will be treated at wastewater treatment facility before being discharged into existing sewerage system. SS, BOD, COD of effluents discharged from the WTP will comply with Cambodia effluent standards to sewerage system (Sub-decree No. 27 on the Water Pollution Control; SS<120 mg/L, BOD<80 mg/L and COD<100 mg/L).
	(3) Wastes	(a) Are wastes, such as sludge generated by the facility operations properly treated and disposed in accordance with the country's regulations?	N	(a) In Cambodia, there are no laws or regulations on WTP sludge disposal. During construction phase: part of construction waste soil (app. 1,000 m ³) will be reused for backfilling at construction site. The remaining waste soil (app. 1,000 m ³) will be reused for backfilling of Boeng Tompun (lagoon, 3 km far from the WTP). During operation period: WTP sludge will be collected and transported to new landfill site by PPWSA who is conducting a detailed survey on the reuse of sludge for backfilling. In addition, the amount of the sludge is limited (app. 3 IDS/day).
	(4) Noise and Vibration	(a) Do noise and vibrations generated from the facilities, such as pumping stations comply with the country's standards?	Y	(a) During construction period: Current noise levels around the WTP are 57 to 69 dB(A). During construction, the noise level at boundary of the WTP is estimated to be 78-87 dB(A) due to construction equipment and vehicles operation, which exceeds the standard (75 dB) slightly. However, no sensitive facilities have been identified around the WTP site. In addition, EMP has been prepared and contractor will follow the EMP to minimize noise and vibration during construction period. Current vibration levels (equivalent levels) at the project area are 17 to 26 dB, which are much lower than that of Japanese standards (65 dB). Therefore, it is estimated that vibration levels during construction period will comply with Japanese standards (no vibration standards in Cambodia). During operation period: All pumps will be installed within pump stations, therefore, the noise and vibration level in outside of pump stations is considered to be same as the background level of the site.
	(5) Subsidence	(a) In the case of extraction of a large volume of groundwater, is there a possibility that the extraction of groundwater will cause subsidence?	N	(a) During construction period and operation period, no groundwater will be extracted. Therefore, the impacts of subsidence are not expected.
3. Natural Environment	(1) Protected Areas	(a) Is the project site located in protected areas designated by the country's laws or international treaties and conventions? Is there a possibility that the project will affect the protected areas?	N	(a) The project sites are not located in protected area or environmentally sensitive areas designated by Cambodia laws or international treaties. In addition, all proposed treatment facilities will be located within the existing WTP site. Therefore, there is no possibility that the project will affect the protected areas.

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Category	Environmental Item	Main Check Items	Yes/No/N	Confirmation of Environmental Considerations (Reasons/Mitigation Measures)
	(2) Ecosystem and Biota	(a) Does the project site encompass primeval forests, tropical rain forests, ecologically valuable habitats (e.g., coral reefs, mangroves, or tidal flats)?	N	(a) The project site doesn't encompass primeval forests, tropical rain forests, and ecologically valuable habitats.
		(b) Does the project site encompass the protected habitats of endangered species designated by the country's laws or international treaties and conventions?	N	(b) Within the project site, there are no protected habitats of endangered species designated by Cambodia laws or international treaties and conventions.
		(c) If significant ecological impacts are anticipated, are adequate protection measures taken to reduce the impacts on the ecosystem?	N	(c) It is not anticipated to cause significant ecological impacts because there are no protected habitats in the area of the WTP site.
		(d) Is there a possibility that the amount of water (e.g., surface water, groundwater) used by the project will adversely affect aquatic environments, such as rivers? Are adequate measures taken to reduce the impacts on aquatic environments, such as aquatic organisms?	Y	(d) Raw water of 0.38 m ³ /s will be intaken from Bassac River, which is much less than low flow (40 m ³ /s) of the River. Therefore, the impacts of the project on aquatic environments of Bassac River are considered to be not significant. In addition, an approval letter has been obtained from Cambodia National Mekong Committee. PPWSA will prepare water supply plan during dry period in cooperation with MoE in order to ensure suitable environmental flow of Bassac River in the future.
4. Social Environment	(1) Resettlement	(a) Is there a possibility that the amount of water used (e.g., surface water, groundwater) by the project will adversely affect surface water and groundwater flows?	N	(e) Compared with low flow (40 m ³ /s) of Bassac River, intake volume (33,000 m ³ /d or 0.38 m ³ /s) will not have significant impacts on surface water and groundwater flow. In addition, an approval letter has been obtained from Cambodia National Mekong Committee.
		(a) Is involuntary resettlement caused by project implementation? If involuntary resettlement is caused, are efforts made to minimize the impacts caused by the resettlement?	N	(a) Because the considerations for avoiding resettlement are made and the WTP will be constructed within existing WTP site of PPWSA, there is no resettlement caused by the project.
		(b) Is adequate explanation on compensation and resettlement given to affected people prior to resettlement?	N	(b) For the proposed project, no resettlement will take place.
		(c) Is the resettlement plan, including compensation with full replacement costs, restoration of livelihoods and living standards developed based on socioeconomic studies on resettlement?	N	(c) For the proposed project, neither resettlement nor land acquisition will take place. Therefore, preparation of resettlement plan including compensation is not needed.
		(d) Is the compensations going to be paid prior to the resettlement?	N	(d) For the proposed project, neither resettlement nor land acquisition will take place. Therefore, no compensations will be necessary for the resettlement.

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Category	Environmental Item	Main Object Items	Yes / No	Confirmation of Environmental Considerations (Reasons, Mitigation Measures)
		(e) Is the compensation policies prepared in document?	N	(e) For the proposed project, neither resettlement nor land acquisition will take place. Therefore, preparation of compensation policies is not expected.
		(f) Does the resettlement plan pay particular attention to vulnerable groups or people, including women, children, the elderly, people below the poverty line, ethnic minorities, and indigenous peoples?	N	(f) For the proposed project, there is no resettlement or land acquisition.
		(g) Are agreements with the affected people obtained prior to resettlement?	N	(g) For the proposed project, there is no resettlement and land acquisition. Therefore, it is not necessary to get agreement with the affected people.
		(h) Is the organizational framework established to properly implement resettlement? Are the capacity and budget secured to implement the plan?	N	(h) For the proposed project, there is no resettlement and land acquisition.
		(i) Are any plans developed to monitor the impacts of resettlement?	N	(i) For the proposed project, alternative studies have been carried out to avoid resettlement. As the results, there is no resettlement or land acquisition will be required. Therefore, it is not necessary to monitor the impacts of resettlement.
		(j) Is the grievance redress mechanism established?	N	(j) For the proposed project, there is no resettlement or land acquisition. Thus, it is not necessary to establish grievance redress mechanism.
	(2) Living and Livelihood	(a) Is there a possibility that the project will adversely affect the living conditions of inhabitants? Are adequate measures considered to reduce the impacts, if necessary?	N	(a) All proposed facilities will be located within the existing WTP site and will not affect the living environment of the land other than the construction site. The project is expected to improve the living environment as the water supply rate increases. Fishing activity is prohibited from July 1 to November 30 each year because this is the breeding season for all kinds of fish. Therefore, the impacts of the construction on fishing activity are not expected during this period. During fishing season, the construction of the WTP may create impacts on fishing activity. However, fishing activity can be conducted at upstream or downstream (500m or more) of intake construction site. Therefore, the impacts on fishing activity are low and mitigable.
		(b) Is there a possibility that the amount of water used (e.g., surface water, groundwater) by the project will adversely affect the existing water uses and water area uses?	N	(a) Comparing with low flow (40 m ³ /s) of Bassac River, intake amount (33,000 m ³ /d or 0.38 m ³ /s) will not have significant impacts on the existing water uses and water area uses. In addition, an approval letter has been obtained from Cambodia National Mekong Committee.
	(3) Heritage	(a) Is there a possibility that the project will damage the local archeological, historical, cultural, and religious heritage? Are adequate measures considered to protect these sites in accordance with the country's laws?	N	(a) Ta Khmau WTP site is located within existing WTP site. Thus, the impact is considered to be negligible.

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Category	Environmental Item	Main Check Items	Yes/No/NS/N	Confirmation of Environmental Considerations (Reasons, Mitigation Measures)
	(4) Landscape	(a) Is there a possibility that the project will adversely affect the local landscape? Are necessary measures taken?	N	(a) The WTP is located within the existing WTP site, and area is small (0.45 ha). In addition, tree planting will be conducted in the WTP.
	(5) Ethnic Minorities and Indigenous Peoples	(a) Are considerations given to reduce impacts on the culture and lifestyle of ethnic minorities and indigenous peoples? (b) Are all of the rights of ethnic minorities and indigenous peoples in relation to land and resources respected?	Y	(a) There is no ethnic minority or indigenous group in the project area. In addition, water service rate will be increased up to 100%. (b) Ditto
	(6) Working Conditions	(a) Is the project proponent not violating any laws and ordinances associated with the working conditions of the country which the project proponent should observe in the project? (b) Are tangible safety considerations in place for individuals involved in the project, such as the installation of safety equipment which prevents industrial accidents, and management of hazardous materials? (c) Are intangible measures being planned and implemented for individuals involved in the project, such as the establishment of a safety and health program, and safety training (including traffic safety and public health) for workers etc.? (d) Are appropriate measures taken to ensure that security guards involved in the project not to violate safety of other individuals involved, or local residents?	Y	(a) Cambodian laws and ordinances (such as Labor Law 1997 and amendment Law 2018, the Law on Social Security, Sub-Decree 11/16, on Health Care Scheme etc.) associated with working conditions (such as wage and hours of work etc.) will be followed by the project proponent during construction works and operation of the project based on Environmental Management Plan (EMP). (b) Safety considerations will be taken during construction works and operation of the project based on the EMP prepared (such as ear protection equipment must be provided to workers when a noise level exceeds 80 dB(A) in the WTP construction site or within pump station). In addition, inspections of PPWSA and other authorities on safety will be conducted. (c) Safety and health program and safety training for workers will be planned and implemented during construction works and operation of the project based on EMP prepared. (such as wearing safety shoes and elements during construction, following Standard Operation Procedures for the works during operation) (d) Appropriate measures will be taken based on EMP prepared. (such as specific security guards will be assigned by contractor and PPWSA will conduct regular inspection during construction and operation)
5. Others	(1) Impacts during Construction	(a) Are adequate measures considered to reduce impacts during construction (e.g., noise, vibrations, turbid water, dust, exhaust gases, and wastes)?	Y	(a) Mitigation measures on utilization of local resources (fishing), water usage/water right, traffic control, poor households, accidents (such as safety plan preparation, O/M manual etc.), air pollution (such as covering trucks and spraying exposed areas with water etc.), water pollution, wastes (sludge reuse methods etc.), noise and vibrations (such as application of reasonable construction schedule and methods etc.) have been proposed.

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Category	Environmental Item	Main Check Items	Yes/No/N	Confirmation of Environmental Considerations (Reasons/Mitigation Measures)
		(b) If construction activities adversely affect the natural environment (ecosystem), are adequate measures considered to reduce impacts? (c) If construction activities adversely affect the social environment, are adequate measures considered to reduce impacts? (d) If the construction activities might cause traffic congestion, are adequate measures considered to reduce such impacts?	Y Y Y	(b) All construction works of Ta Khmau WTP will be carried out within the existing WTP site. Therefore, the impacts on the natural environment (ecosystem) will be very limited. (c) Before construction starts, information will be delivered to fisherman via commune and village chiefs in advance. A detailed traffic control plan will be prepared. In addition, proper construction schedule and methods to reduce traffic disruption and traffic accident. Education of staff/workers on the safety and fire will also be conducted to reduce impacts. (d) Proper construction plan of the WTP and traffic control plan will be prepared before construction,
	(2) Monitoring	(a) Does the proponent develop and implement monitoring program for the environmental items that are considered to have potential impacts? (b) What are the items, methods and frequencies of the monitoring program? (c) Does the proponent establish an adequate monitoring framework (organization, personnel, equipment, and adequate budget to sustain the monitoring framework)? (d) Are any regulatory requirements pertaining to the monitoring report system identified, such as the format and frequency of reports from the proponent to the regulatory authorities?	Y Y Y Y	(a) Environmental monitoring program has been prepared in the IEIA report based on the recommendations from the JICA Survey Team. (b) The items, methods and frequencies of the monitoring program have been proposed and presented in Preparatory Survey Report. Basically, air quality (CO, NO ₂ , SO ₂ , O ₃ , Pb, TSP, PM ₁₀ and PM _{2.5}); time/6 months; basin water quality (pH, temperature, TDS, TSS, DO, BOD, COD, Oil and Grease, NO ₃ , T-N, T-P, As, Hg, Total Coliform etc. 17 parameters); time/two weeks, noise and vibration: time/6 months, traffic (along National Highway 102): regularly. (c) Monitoring framework (organization, personnel, equipment, and adequate budget to sustain the monitoring framework) has been prepared. (d) Monitoring format has been proposed.
6 Note	Reference to Checklist of Other Sectors	(a) Where necessary, pertinent items described in the Dam and River Projects checklist should also be checked.	N	(a) Not necessary.

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Category	Environmental Item	Main Checklist Items	Yes/No/N	Confirmation of Environmental Considerations (Reasons, Mitigation Measures)
	Note on Using Environmental Checklist	(a) If necessary, the impacts to transboundary or global issues should be confirmed (e.g., the project includes factors that may cause problems, such as transboundary waste treatment, acid rain, destruction of the ozone layer, or global warming).	Y	(b) Not necessary.

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Environmental Management Plan

Impacts	Mitigation Measures	Implementing Organization	Responsible Organization	Cost
Before / During Construction				
Traffic	<ol style="list-style-type: none"> 1) Prepare a detailed traffic control plan and to coordinate with local government. 2) Prepare proper construction schedule and methods to reduce traffic disruption and traffic accident. 3) Assign traffic control person at the entrance of the WTP while construction is taking place. 	Contractor	PPWSA	Included in the construction cost
Air Pollution	<ol style="list-style-type: none"> 1) Cover stored materials with plastic or other materials. 2) Cover trucks, and to spray exposed areas with water. 3) Wash vehicles before going out the construction site. 4) Minimize traffic over freshly exposed surfaces. 5) Install barrier walls for limiting wind dispersing if necessary. 6) Prepare air quality monitoring plan and carry out it during construction. 7) Update the Environmental Monitoring Plan during Detailed Design 	Contractor	PPWSA	2,000 USD/year (Included in the construction cost)
Waste	<ol style="list-style-type: none"> 1) Prepare reasonable plan for solid waste disposal, especially for excavated soil. 2) Install temporary toilet at the construction site for workers, and set sanitary bins for domestic wastes. 3) PPWSA has a plan to sell the surplus waste soil to buyer as backfilling materials. 4) Dispose solid wastes appropriately 	Contractor	PPWSA	Included in the construction cost
Noise	<ol style="list-style-type: none"> 1) Prepare a detailed plan for noise control and coordinate with local government. 2) Prepare proper construction schedule and methods. 3) Set speed limits for vehicles and train workers on mitigation measures for environmental impacts. 4) Use low noise level equipment, if necessary. 5) Prepare noise monitoring plan and carrying out monitoring during construction. 	Contractor	PPWSA	1,000 USD/year (Included in the construction cost)
Water Pollution	<ol style="list-style-type: none"> 1) The embankment will be constructed to prevent land erosion during the rainfall. 2) Carry out water quality monitoring. 3) Install wastewater treatment system within the WTP to treat domestic wastewater during construction and operation. 	Contractor	PPWSA	1,000 USD/year (Included in the construction cost)
During Operation				
Air quality	<ol style="list-style-type: none"> 1) Preparing air quality monitoring plan. 2) Implementation of air quality monitoring. 	Operator	PPWSA	1,000 USD/year (Included in the O&M cost)
Waste	<ol style="list-style-type: none"> 1) Monitoring on volume of sludge and solid wastes from the WTP. 2) Implementation of EMP for operation of the WTP. 	Operator	PPWSA	Included in the O&M cost
Water pollution	<ol style="list-style-type: none"> 1) Preparing water quality monitoring plan. 2) Implementation of water quality monitoring at downstream of the WTP. 	Operator	PPWSA	2,000 USD/year (Included in the O&M cost)

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Environmental Monitoring Form (Construction Phase)

The latest results of the below monitoring items should be submitted to JICA Cambodia Office as part of Quarterly Progress Report throughout the construction phase.

1. Response/Actions to Comments and Guidance from Government Authorities and the Public

Monitoring Item	Monitoring Results during Report Period
Number and contents of formal comments made by the public	
Number and contents of responses from government agencies (such as MoE etc.)	

2. Pollution

2.1 Water Quality

Parameter	Unit	Measures Value (Average)	Measures Value (Max.)	Cambodian Standards	Japanese Standards	To be met the requirements instructed by PPWSA	Measurement Point	Frequency
pH	-					To be confirmed		
SS	mg/L					To be confirmed		
Turbidity	mg/L					To be confirmed		
COD	mg/L					To be confirmed		
NH ₄ -N	mg/L					To be confirmed		
Coliform	MPN/100mL					To be confirmed		
SS	mg/L			120	80	120	2 points (1. at upstream of WTP intake, 1 at downstream of the WTP intake) for intake construction	Preconstruction: 1 time/point Construction: 1 time/point
BOD	mg/L			80	40	80		
COD	mg/L			100	40	100		
							1 point (at the discharge point to existing sewerage system) for sewerage management in construction site	1 time/point/month

2.2 Air Quality

Parameter	Unit	Measures Value (Average)	Measures Value (Max.)	Cambodian Standards	Japanese Standards	Standards for Contract	Measurement Point	Frequency
CO				20	20	20	1 point (1 at the WTP site)	Preconstruction: 1 time/point Construction: 1 time/point
NO ₂	mg/m ³			0.1	0.04	0.1		
SO ₂				0.3	0.04	0.3		

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Parameter	Measures Value (Average)	Measures Value (Max.)	Waste Disposal Method	Cambodian Standards	Japanese Standards	Standards for Contract	Frequency
O ₃				0.2	0.06	0.2	1 time/point/6 months
Pb				0.005	-	0.005	
TSP				0.33	0.1	0.33	
PM ₁₀				0.005	-	0.005	
PM _{2.5}				0.025	0.015	0.025	

2.3 Noise and Vibration and Solid Waste

Parameter	Unit	Measures Value (Average)	Measures Value (Max.)	Waste Disposal Method	Cambodian Standards	Japanese Standards	Standards for Contract	Measurement Point	Frequency
Equivalent continuous A sound level (L _{aeq} , 10)	dB(A)			-	75 (6:00-18:00)	70	75	2 points (1 at the WTP, 1 at western boundary of the WTP)	Preconstruction: 1 time/point Construction: 1 time/point/6 months
Vibration level (Lv10)	dB(A)			-	-	65 (8:00-19:00)	65	2 points (1 at the WTP, 1 at western boundary of the WTP)	Preconstruction: 1 time/point Construction: 1 time/point/6 months
Volume of wastes (waste soil)	m ³				-	-	-	2 points (1 at Gate of the WTP, 1 at Boeig Tompun Lagoon)	1 time (24 hr)/month
Volume of wastes (other construction wastes)	m ³				-	-	-	2 points (1 at Gate of the WTP, 1 at existing Dangkor landfill site by 2021 or new landfill sit after 2021)	1 time (24 hr)/month

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Environmental Monitoring Form (Operation Phase)

3.1 Water Quality

Parameter	Unit	Measures Value (Average)	Measures Value (Max.)	Cambodian Standards	Japanese Standards	Standards for Contract	Measurement Point	Frequency
SS	mg/L			120	80	120	1 point	1 time/point/month (at the discharge point to existing sewerage system)
BOD	mg/L			80	40	80		
COD	mg/L			100	40	100		

3.2 Air Quality

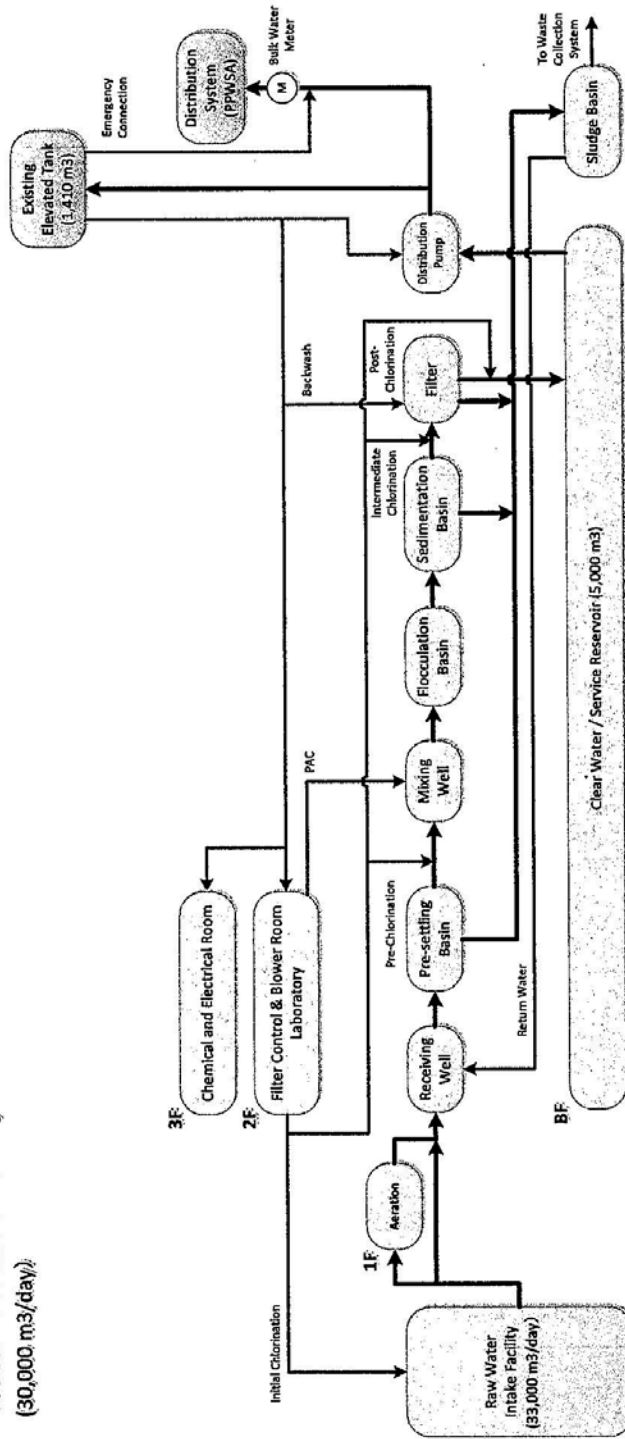
Parameter	Unit	Measures Value (Average)	Measures Value (Max.)	Cambodian Standards	Japanese Standards	Standards for Contract	Measurement Point	Frequency
CO	mg/m ³			20	20	20	1 point (1 at the WTP site)	Preconstruction 1 time/point Construction: 1 time/point/6 months
NO ₂				0.1	0.04	0.1		
SO ₂				0.3	0.04	0.3		
O ₃				0.2	0.06	0.2		
Pb				0.005	-	0.005		
TSP				0.33	0.1	0.33		
PM ₁₀				0.005	-	0.005		
PM _{2.5}			0.025	0.015	0.025			

3.3 Solid Waste

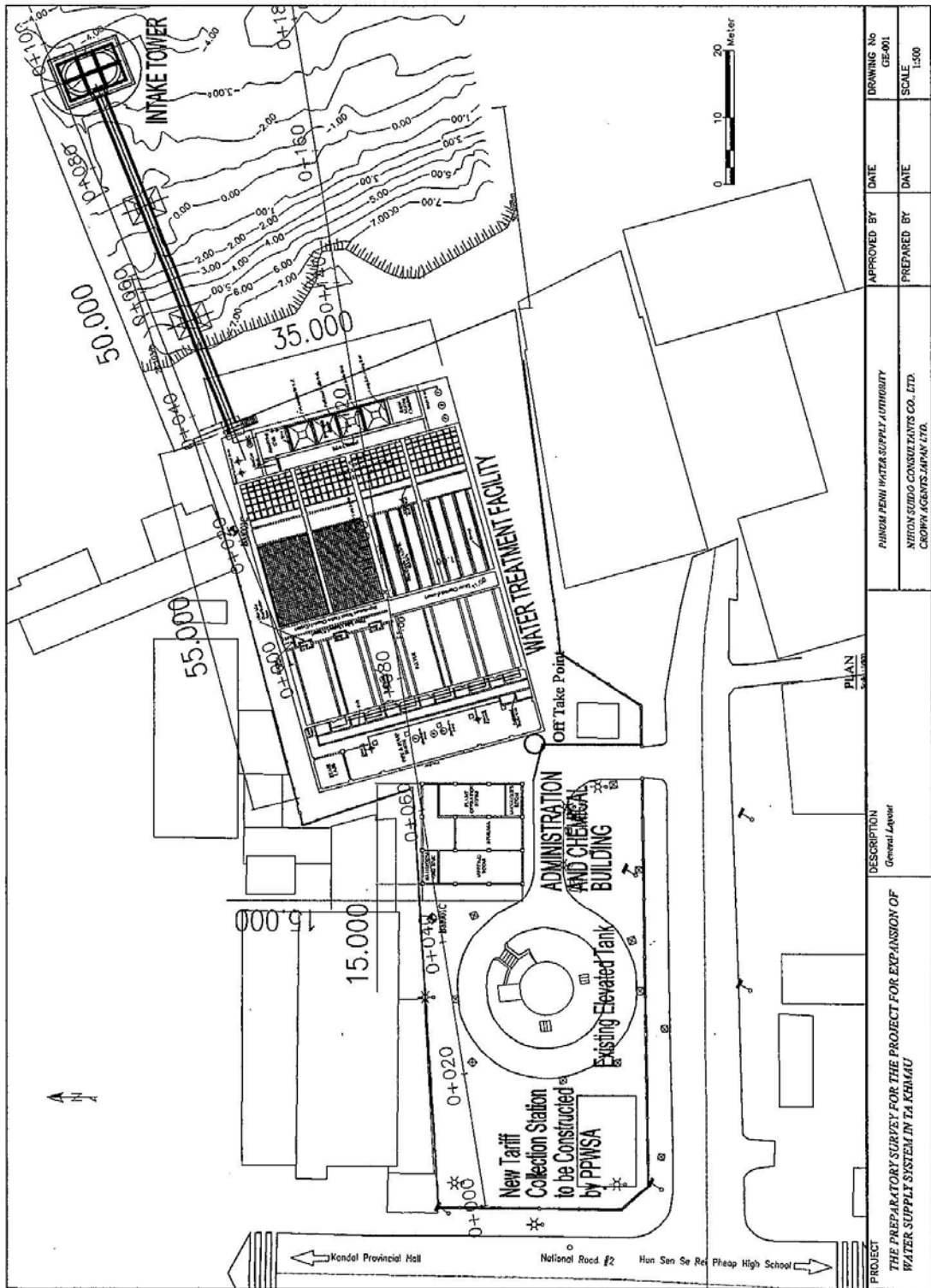
Parameter	Unit	Measures Value (Average)	Measures Value (Max.)	Sludge Disposal Method	Cambodian Standards	Standards for Contract	Measurement Point	Frequency
Volume of sludge	m ³			[1] Landfill [2] Reuse for backfilling [3] Other	-	-	2 points (1 at Gate of the WTP, 1 at new landfill site or reuse site)	1 time (24 hr)/6 months

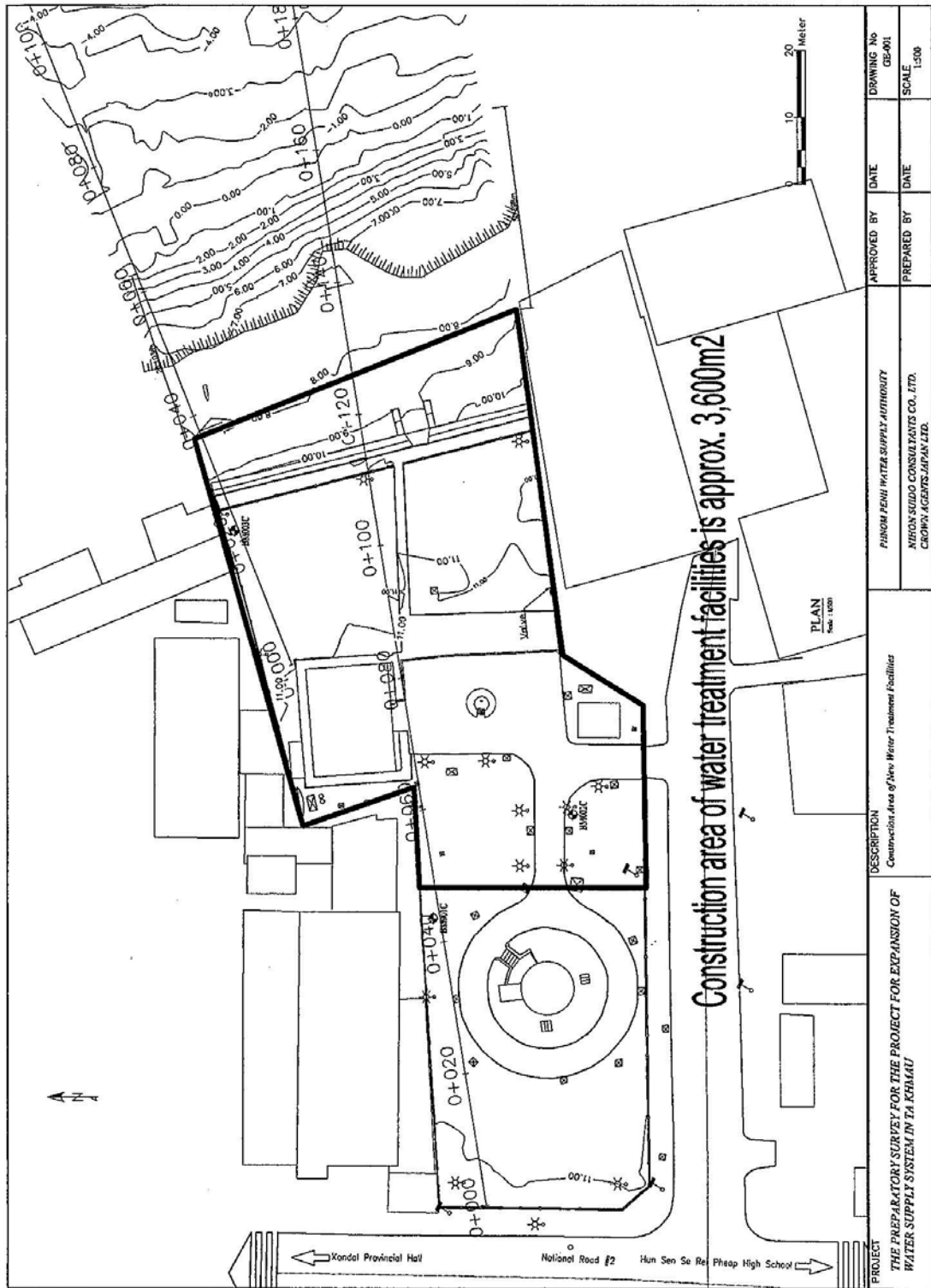
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**Ta Khmau WTP
Treatment Process
Water Treatment Facility
(30,000 m³/day)**



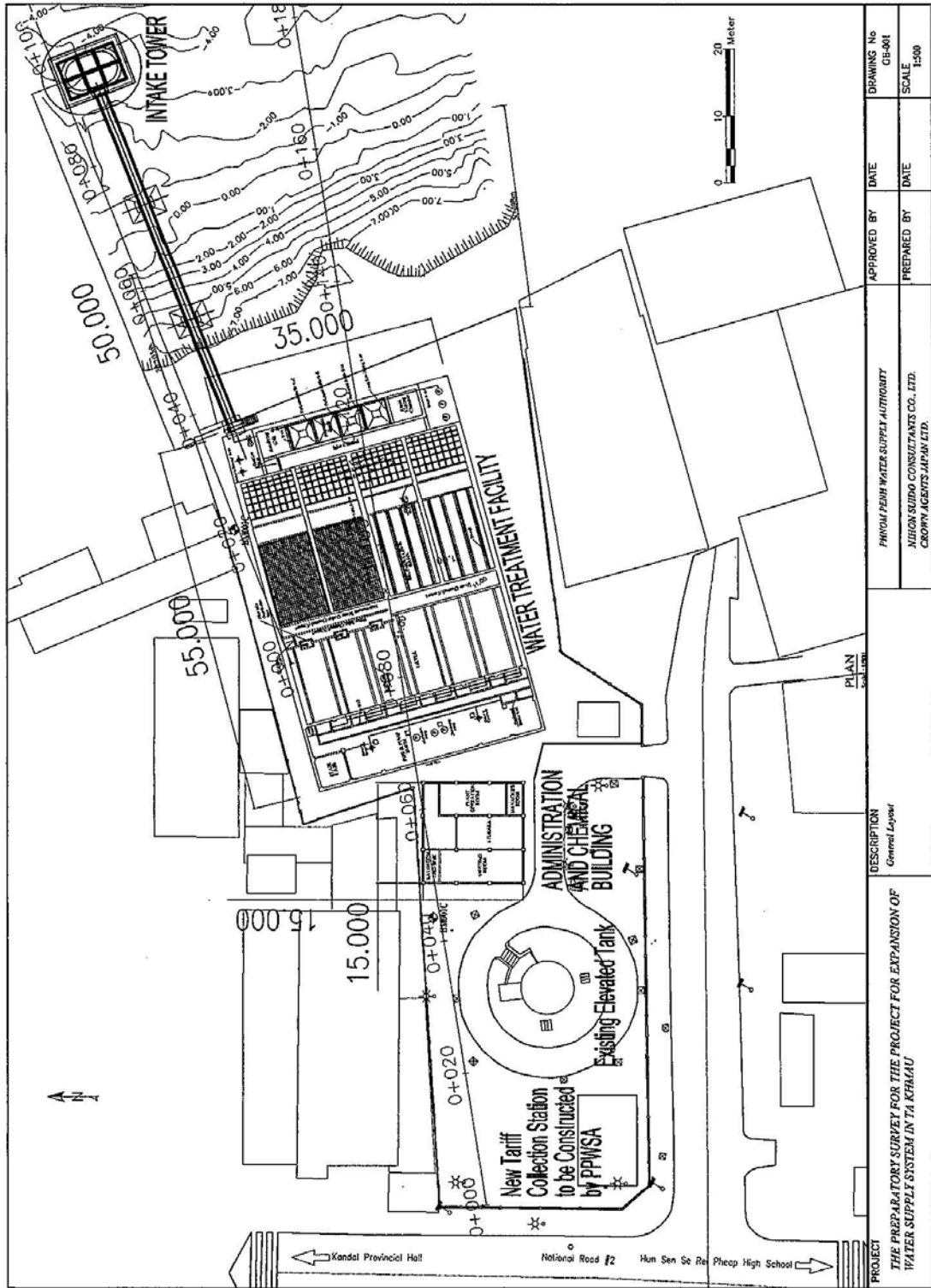
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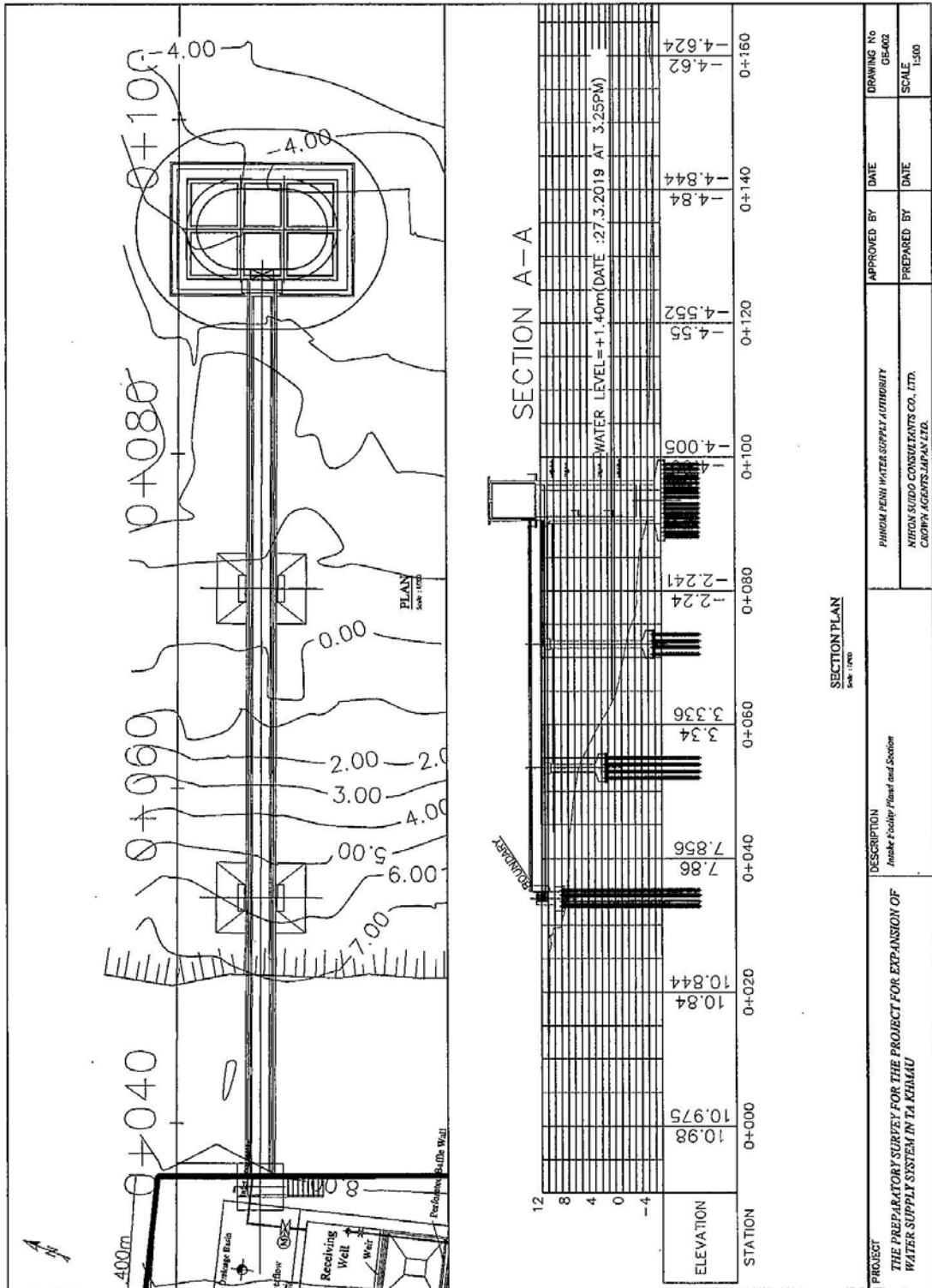
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PROJECT THE PREPARATORY SURVEY FOR THE PROJECT FOR EXPANSION OF WATER SUPPLY SYSTEM IN TA KHMAU	DESCRIPTION Construction Area of New Water Treatment Facilities	APPROVED BY		DRAWING No. GE-001
		PREPARED BY		SCALE 1:500
		DATE	DATE	
		FUNGOM FEHI WATER SUPPLY AUTHORITY NIHON SUDO CONSULTANTS CO., LTD. CROWN AGENTS JAPAN LTD.		

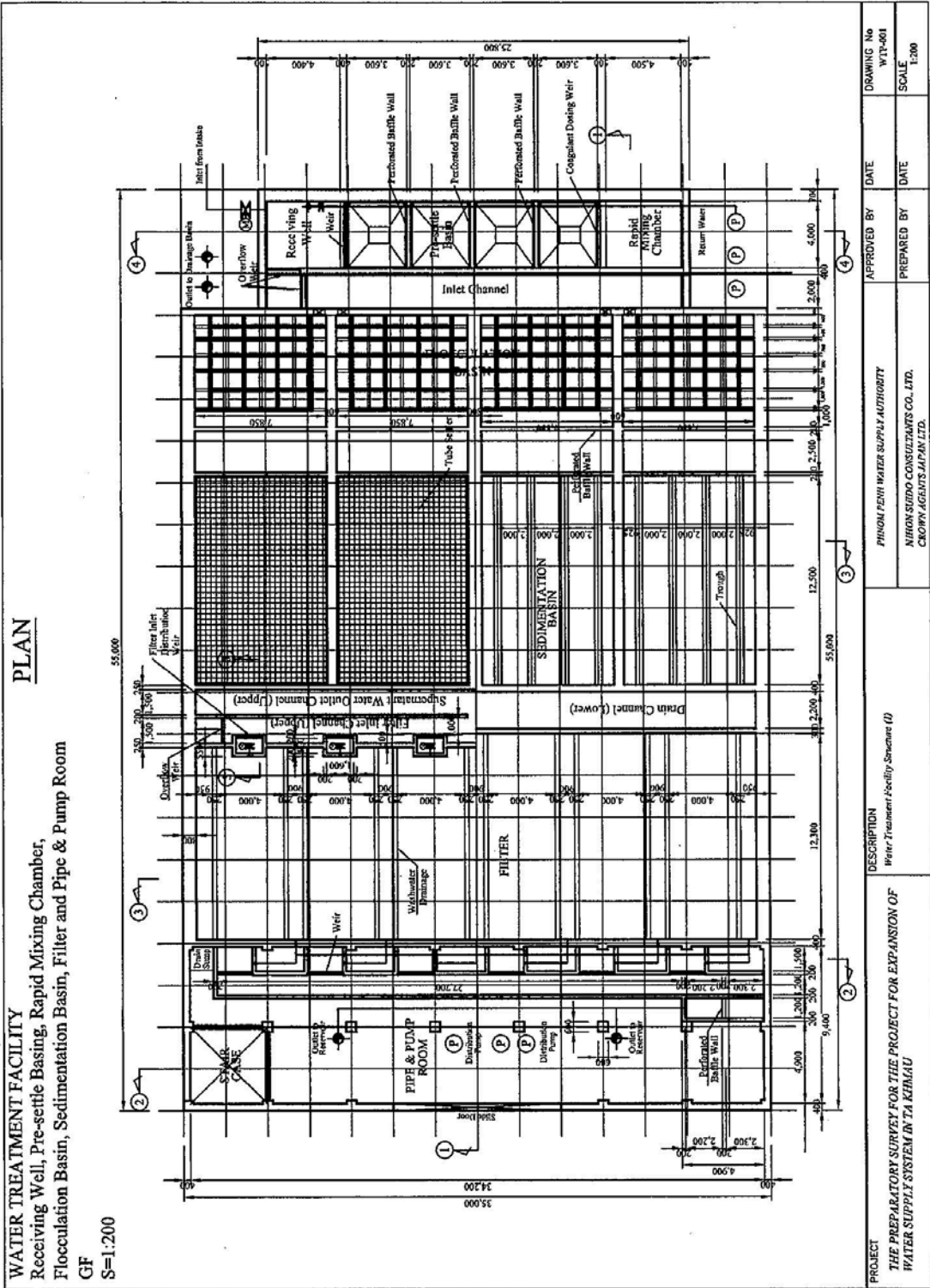


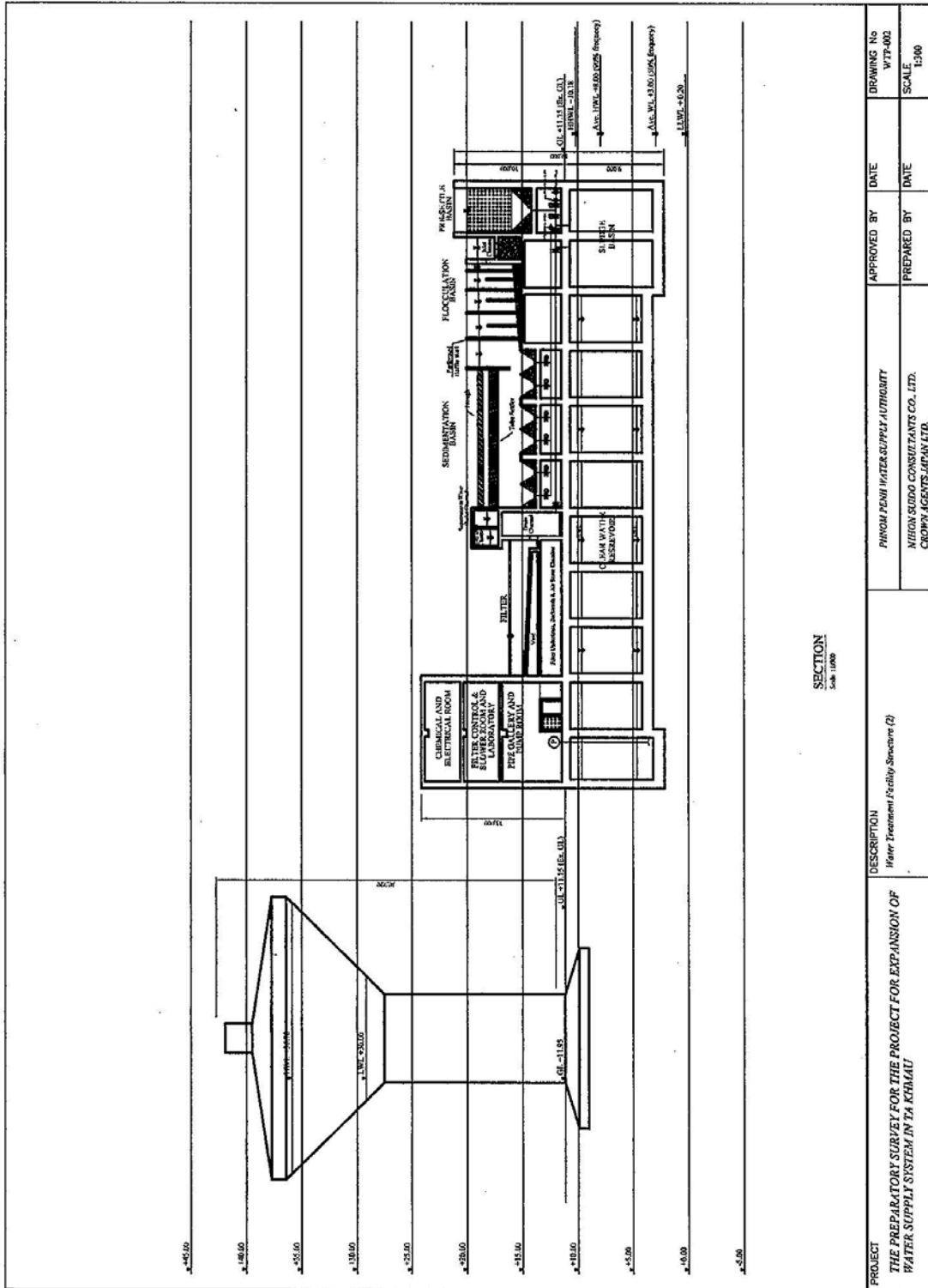
PROJECT THE PREPARATORY SURVEY FOR THE PROJECT FOR EXPANSION OF WATER SUPPLY SYSTEM IN TA KHMAU	DESCRIPTION General Layout	PHASE SURVEY	APPROVED BY	DATE	DRAWING NO. CB-901
			PREPARED BY	DATE	SCALE 1:200
PHNOM PENH WATER SUPPLY AUTHORITY NIKHON SUBIDO CONSULTANTS CO., LTD. CROWN AGENTS JAPAN LTD.					

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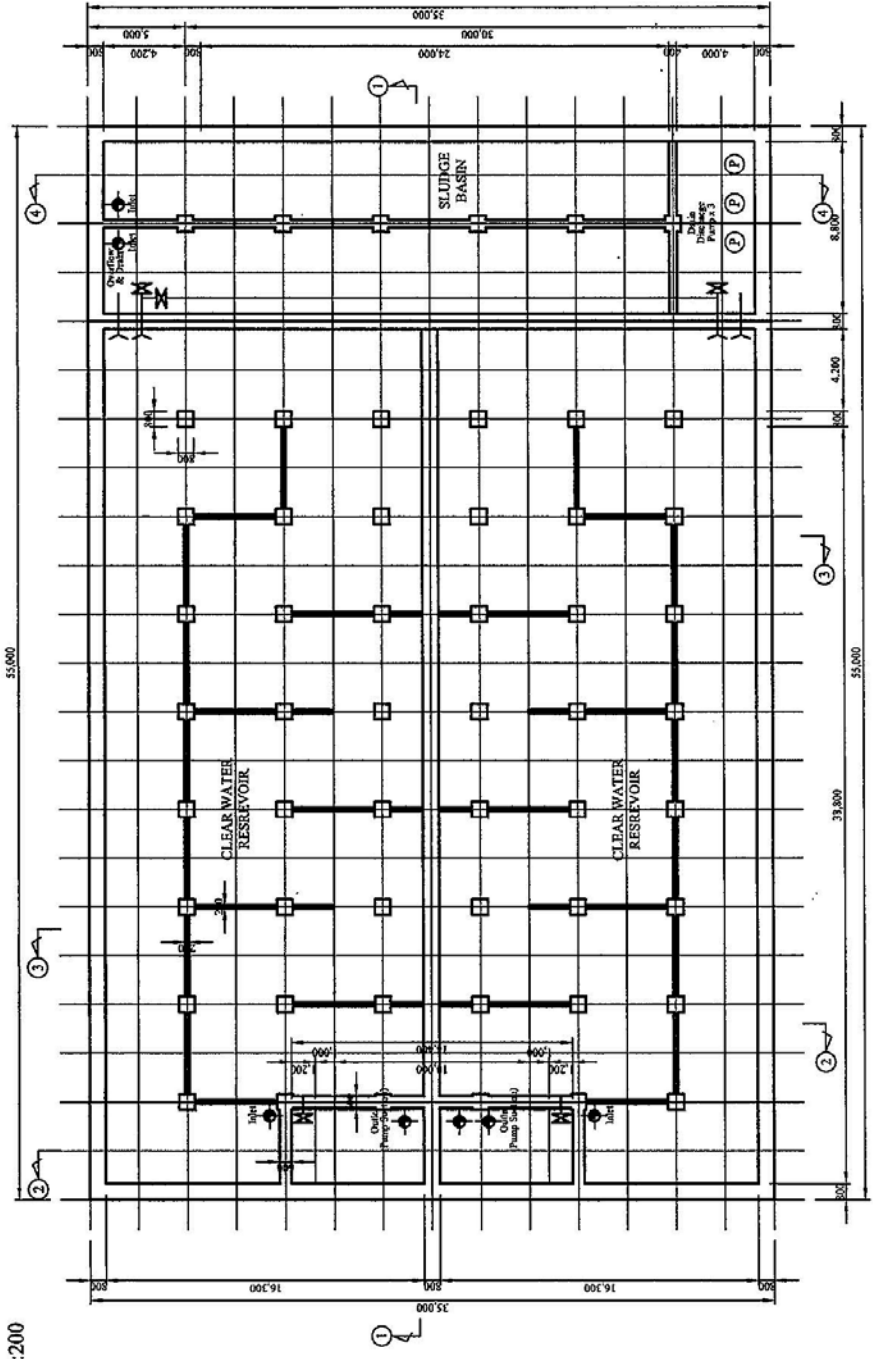
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WATER TREATMENT FACILITY
 Clear Water Reservoir & Sludge Basin
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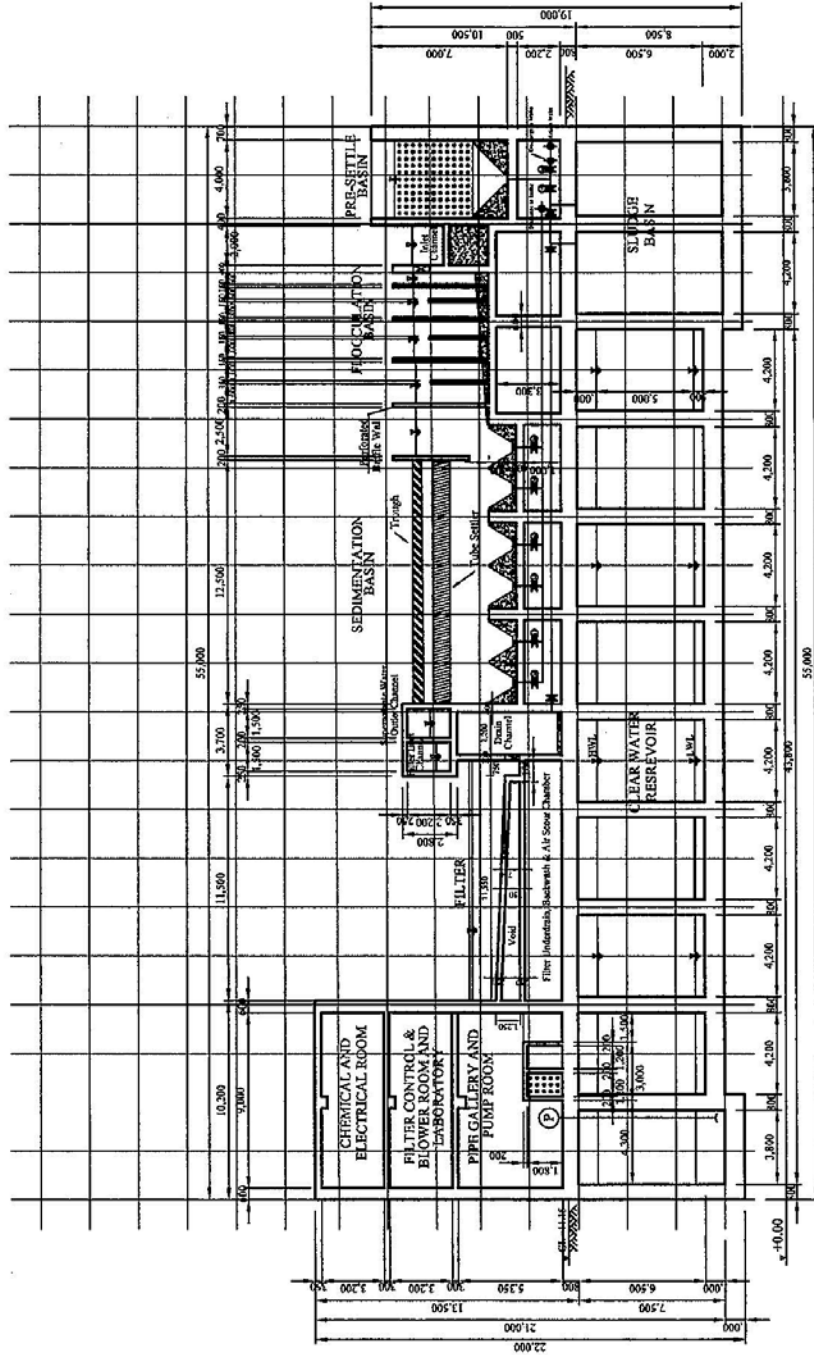
PLAN



PROJECT THE PREPARATORY SURVEY FOR THE PROJECT FOR EXPANSION OF WATER SUPPLY SYSTEM IN TA KUNGAU	DESCRIPTION Water Treatment Facility Structure (B)	APPROVED BY	DATE	DRAWING No WTF-003
		PREPARED BY	DATE	SCALE 1:200
		PINSON FENI WATER SUPPLY AUTHORITY NIHON SUDO CONSULTANTS CO., LTD. CROPVY AGENTS JAPAN LTD.		

WATER TREATMENT FACILITY
 General Section
 S=1:200

GENERAL SECTION 1-1

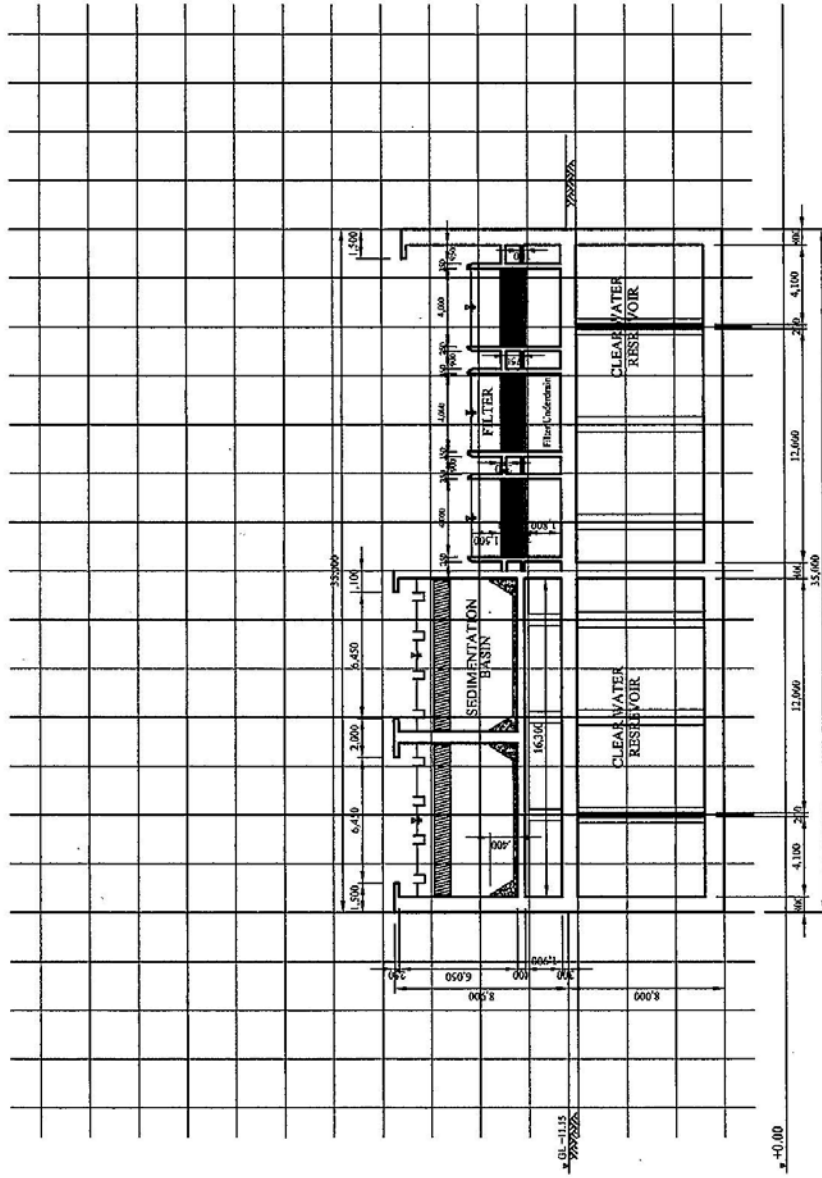


PROJECT THE PREPARATORY SURVEY FOR THE PROJECT FOR EXPANSION OF WATER SUPPLY SYSTEM IN TA KUMAU	DESCRIPTION Water Treatment Facility Structure (4)	PHINOM PETH WATER SUPPLY AUTHORITY	APPROVED BY	DATE	DRAWING No WT-001
		NHON SUJODO CONSULTANTS CO., LTD. CROPPY AGENTS JAPAN LTD.	PREPARED BY	DATE	SCALE 1:200

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WATER TREATMENT FACILITY
Section
S-1:200

SECTION 3-3



PROJECT	DESCRIPTION	APPROVED BY	DATE	DRAWING No
THE PREPARATORY SURVEY FOR THE PROJECT FOR EXPANSION OF WATER SUPPLY SYSTEM IN TA KUNAU	Water Treatment Facility Structure (f)			WT-405
				SCALE
		PREPARED BY	DATE	1:200
		PINOH FENH WATER SUPPLY AUTHORITY NIHON SUDO CONSULTANTS CO., LTD. CROPPY AGENTS JAPAN LTD.		

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Document No.1 Term Sheet

THE PROJECT FOR EXPANSION OF WATER SUPPLY SYSTEM IN TA KHMAU

CONFIDENTIAL / DRAFT / DISCUSSION PURPOSE ONLY

1. Project Outline

1.1 Project Background

- The water demand in the area supplied by PPWSA is projected to be double in 2030 and capacity of existing water treatment plants (hereinafter referred to as “WTP/WTPs”) in Phnom Penh will be insufficient to meet the demand in 2020.
- The New WTP shall be developed to supply the water mainly in Ta Khmau area in which many low-income households need access to clean water at affordable water tariff and neighbor Phnom Penh areas where PPWSA develops water distribution system.
- The Government of Cambodia requested to the Government of Japan for the funds to implement the project for expansion of water supply system in Ta Khmau.

1.2 Project Objectives

The objective of the Project is to improve the access to safe water in Ta Khmau District through the expansion of water supply system including construction, operation and maintenance (hereinafter referred to as “O&M”) of the new WTP.

1.3 Project Structure

The Project would be implemented by applying the Japanese Grant Aid with O&M, whose outline is explained in Annex 3 of Minutes of Discussions on the Preparatory Survey for the Project for Expansion of Water Supply System in Ta Khmau dated 29th March 2019 in particular;

- PPWSA will be the executing agency and the implementing agency for the Project.
- The Japanese Grant Aid shall be used for construction of the facilities and procurement of equipment necessary for the Project, and the consulting service to be assigned to consultants.
- A Japanese company or a joint venture of Japanese companies will be selected through a competitive tender and establish a Special Purpose Company (SPC) in Cambodia that shall be responsible for the design, construction, and O&M of the new WTP consistently,
- Contracts consist (a) comprehensive contract which consolidates both contracts for the purchase of the products and/or services and for the operation and maintenance, (b) contract(s) for the purchase of products and/or services and (c) contract(s) for the operation and maintenance, and
- The Government of Cambodia shall ensure that customs duties, internal taxes and other

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fiscal levies which may be imposed in the Government of Cambodia with respect to the purchase of the products and/or the services be exempted or be borne by its designated authority without using the Grant and its accrued interest.

1.4 Project Site

The construction site of the new WTP is located in Ta Khmau District, which is shown in Annex 1 of Minutes of Discussions on the Preparatory Survey for the Project for Expansion of Water Supply System in Ta Khmau dated 29th March 2019.

1.5 Risk Allocations

Risks	PPWSA	SPC	Remarks/Examples
Risks related to EPC contract			
EPC risk	O	O	<ul style="list-style-type: none"> - Any additional costs caused by PPWSA shall be borne by PPWSA (e.g. variation orders from PPWSA to SPC, UXO related costs) - Any additional costs caused by change in external conditions shall be borne by PPWSA (e.g. unforeseen ground conditions, major inflation during construction period). These costs may be covered by the amount of the grant for contingency mentioned in the Grant Agreement which is applicable according to the JICA guideline. - Any additional costs caused by SPC shall be borne by SPC (e.g. design deficiency, inflation during construction period).
Force majeure risk at the facility construction stage	O		A Force Majeure is an event that is external, unpredictable, and irresistible and has a significant impact on the project. However, if a Force Majeure occurred during the facility construction stage, such cost shall be borne by PPWSA. (However, such compensation amount will be within the JICA's contingency budget.)
Risks related to O&M contract			
Demand risk	O		PPWSA shall pay for 30,000m ³ /day of treated water if SPC provides or is ready to provide 30,000m ³ /day of treated water that satisfies the required water quality on a monthly average, regardless of any reason on

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			PPWSA side (e.g. demand stays low or distribution pipes get damaged).
Operation risk		O	No payment shall be made if the delivered water does not satisfy the water quality requirement due to poor operation by SPC (e.g. facility malfunction, inappropriate usage of water treatment chemicals etc.). In case the water delivered by SPC does not comply with national drinking water standards required by PPWSA, SPC shall compensate for any damage (e.g. compensation to end-customers) suffered by PPWSA as a result of such poor operation by SPC.
Electricity price risk	O		Any fluctuations in electricity price shall be covered by PPWSA according to the Price Formula for Bulk Water Supply.
Electricity availability risk		O	In case the electricity is not supplied to the facility due to blackout, neither SPC has obligation to supply water to PPWSA, nor PPWSA must pay SPC for the period. SPC does not have a right to claim operating loss caused by such blackout to PPWSA.
Inflation risk (during O&M period)	O	O	off-take price is reviewed and adjusted at the end of third year, sixth year and ninth year from the effective date of O&M period according to inflation fluctuation.
Foreign exchange rate risk		O	Foreign exchange rate risk associated with SPC equity and profit/dividend shall borne by SPC.
Raw water quality risk	O		Additional cost of production due to change in quality of raw water shall be covered by PPWSA and compensated to the SPC.
Licensing risk	O		IEIA/EIA or any other permit/authorization necessary for the SPC to operate the facility shall be obtained by PPWSA.
Legal risk (change of project specific law)	O		Additional cost caused by a change in law that specifically affects the project (e.g. upgrade of national quality standard for drinking water) shall be covered by PPWSA and compensated to the SPC.
Legal risk (change of general law)		O	Additional cost caused by a change in general law that would affect the whole economy (e.g. VAT) shall be covered by the SPC.
Force Majeure	O	O	A Force Majeure is an event that is external, unpredictable,

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<p>risk</p>		<p>and irresistible and has a significant impact on the project. Both parties may terminate the contract if the impact of a Force Majeure lasts for a certain period (based on practice of water utilities). Neither party has any obligation to each other for the cost of mitigation measures to prevent increasing loss caused by Force Majeure. PPWSA shall have the option to require SPC to transfer to PPWSA all of its right, title and interest in and to the assets. The value of the assets shall be net book value of the assets.</p>
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1.6 Project Schedule

Item	Time	2020												2021											
		Term-1				Term-2								Term-3											
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
Cabinet Meeting		▲																							
E/N, G/A																									
Contract / Approval of Consultant																									
Bidding Document Preparation																									
Agreement and Approval of Bidding Document																									
PQ Announcement																									
PQ Evaluation																									
Announcement of Bidding and Distribution of Bidding Document																									
Tender Period																									
Bid Opening																									
Bid Evaluation																									
Contract Agreement																									

Legend:  Work in Cambodia  Work in Japan

Item	Time	2021												2022												2023												2024				
		Term-3				Term-4								Term-5																												
		4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5			
Site Preparation and Surveys																																										
Outline Design / Detailed Design																																										
Import / Transportation of Equipment and Machines																																										
Preparation and Temporary Work																																										
Headworks Construction																																										
Water Treatment and Distribution Facilities Construction																																										
Administration Facilities Construction																																										
Plant Mechanical and Electrical Work																																										
Associated Facilities and Equipment Work																																										
Piping																																										
Landscaping and Finishing																																										
Preparation for Operation and Maintenance																																										
Test Operation																																										

The schedule above is based on the Comparator facilities (the Consultants plan) and SPC may propose shorter construction duration in the tender.

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