

**Minutes of Discussions**  
**on the Preparatory Survey for the Project for**  
**Expansion of Water Supply System in Svay Rieng**  
**(Explanation on Draft Preparatory Survey Report)**

With reference to the minutes of discussions signed between Ministry of Industry, Science, Technology & Innovation (hereinafter referred to as "MISTI") and the Japan International Cooperation Agency (hereinafter referred to as "JICA") on 24<sup>th</sup> August, 2017, 28<sup>th</sup> June, 2018, 3<sup>rd</sup> September, 2019, 13<sup>th</sup> February, 2020, and 12<sup>th</sup> April, 2021, and in response to the request from the Government of Kingdom of Cambodia (hereinafter referred to as "Cambodia") dated on 26<sup>th</sup> June, 2017, JICA dispatched the Preparatory Survey Team (hereinafter referred to as "the Team") for the explanation of Draft Preparatory Survey Report (hereinafter referred to as "the Draft Report") for the Project for Expansion of Water Supply System in Svay Rieng (hereinafter referred to as "the Project").

As a result of the discussions, both sides agreed on the main items described in the attached sheets.

Phnom Penh, 15<sup>th</sup> December, 2021




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Mr. Yoichi Inoue  
Leader  
Preparatory Survey Team  
Japan International Cooperation Agency  
Japan



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H.E. Oum Sotha   
Secretary of State  
Ministry of Industry, Science, Technology  
& Innovation  
Kingdom of Cambodia

## ATTACHEMENT

### 1. Contents of the Draft Report

After the explanation of the contents of the Draft Report by the Team, the Cambodian side agreed to its contents. JICA will finalize the Preparatory Survey Report based on the confirmed items. The report will be sent to the Cambodian side around April, 2022.

### 2. Cost estimate

Both sides confirmed that the cost estimate including the contingency explained by the Team is provisional and will be examined further by the Government of Japan for its approval. The contingency would cover the additional cost against natural disaster, unexpected natural conditions, etc.

### 3. Confidentiality of the cost estimate and technical specifications

Both sides confirmed that the cost estimate and technical specifications of the Project should never be disclosed to any third parties until all the contracts under the Project are concluded.

### 4. Timeline for the project implementation

The Team explained to the Cambodian side that the expected timeline for the project implementation is as attached in Annex 3.

### 5. Expected outcomes and indicators

Both sides agreed that key indicators for expected outcomes are as follows. The Cambodian side will be responsible for the achievement of agreed key indicators targeted in year 2027 and shall monitor the progress for Ex-Post Evaluation based on those indicators.

[Quantitative indicators]

No.	Indicator	Baseline (Measured in 2019)	Target (in 2027) [Two years after completion]
1	Daily average water supply amount (m <sup>3</sup> /day)	4,627	10,009
2	Population served (persons)	23,545	55,964
3	Water supply ratio (Urban area) (%)	48.9	86.7
4	Water pipe connection to poor households (Poor levels 1 and 2)	53	1,254

[Qualitative indicators]

Improvement of the living environment of the population (improvement of the sanitary environment and convenience of the population without water supply connection before)

**6. Ex-Post Evaluation**

JICA will conduct ex-post evaluation after three (3) years from the project completion, in principle, with respect to five evaluation criteria (Relevance, Effectiveness, Efficiency, Impact, Sustainability). The result of the evaluation will be publicized. The Cambodian side is required to provide necessary support for the data collection.

**7. Technical assistance (“Soft Component” of the Project)**

Considering the sustainable operation and maintenance of the products and services granted through the Project, following technical assistance is planned under the Project. The Cambodian side confirmed to deploy necessary number of counterparts who are appropriate and competent in terms of its purpose of the technical assistance as described in the Draft Report.

**8. Undertakings of the Project**

Both sides confirmed the undertakings of the Project as described in Annex 4. With regard to exemption of customs duties, internal taxes and other fiscal levies as stipulated in (2) - 5 of Annex 4, both sides confirmed that such customs duties, internal taxes and other fiscal levies, which shall be clarified in the bid documents by MISTI during the implementation stage of the Project.

The Cambodian side assured to take the necessary measures and coordination including allocation of the necessary budget which are preconditions of implementation of the Project. It is further agreed that the costs are indicative, i.e. at Outline Design level. More accurate costs will be calculated at the Detailed Design stage.

Both sides also confirmed that the Annex 4 will be used as an attachment of G/A.

**9. Monitoring during the implementation**

The Project will be monitored by the Executing Agency (hereinafter referred to as MISTI) and reported to JICA by using the form of Project Monitoring Report (PMR) attached as Annex 5. The timing of submission of the PMR is described in Annex 4.

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## **10. Project completion**

Both sides confirmed that the project completes when all the facilities constructed and equipment procured by the Grant are in operation. The completion of the Project will be reported to JICA promptly by the Executing Agency, but in any event not later than six months after completion of the Project.

## **11. Environmental and Social Considerations**

### **11-1 General Issues**

#### **11-1-1 Environmental Guidelines and Environmental Category**

The Team explained that ‘JICA Guidelines for Environmental and Social Considerations (April 2010)’ (hereinafter referred to as “the Guidelines”) is applicable for the Project. The Project is categorized as “B” because the project is not located in a sensitive area, nor has sensitive characteristics, nor falls into sensitive sectors under the Guidelines, and its potential adverse impacts on the environment are not likely to be significant

#### **11-1-2 Environmental Checklist**

The environmental and social considerations including major impacts and mitigation measures for the Project are summarized in the Environmental Checklist attached as Annex 6. Both sides confirmed that in case of major modification of the content of the Environmental Checklist, the Cambodian side shall submit the modified version to JICA in a timely manner.

### **11-2 Environmental Issues**

#### **11-2-1 Initial Environmental Impact Assessment (IEIA)**

Both sides confirmed the IEIA report has been submitted to the Ministry of Environment (MOE) and Environmental Protection Contract (EPC) necessary for the Project has been signed between MISTI and MOE on 31<sup>st</sup> March, 2021.

#### **11-2-2 Environmental Management Plan and Environmental Monitoring Plan**

Both sides confirmed Environmental Management Plan (EMP) and Environmental Monitoring Plan (EMoP) of the Project is as Annex 7, respectively. Both sides agreed that environmental mitigation measures and monitoring shall be conducted based on the EMP and EMoP, which may be updated during the detailed design stage.



### **11-3 Environmental and Social Monitoring**

#### **11-3-1 Environmental Monitoring**

Both sides agreed that the Cambodian side will submit results of environmental monitoring to JICA with PMR by using the monitoring form attached as Annex 8. The timing of submission of the monitoring form is described in Annex 4.

#### **11-3-2 Information Disclosure of Monitoring Results**

Both sides confirmed that the Cambodian side will disclose results of environmental and social monitoring to local stakeholders through their website / in their field offices.

The Cambodian side agreed JICA will disclose results of environmental and social monitoring submitted by the Cambodian side as the monitoring forms attached as Annex 8 on its website.

### **12. Other Relevant Issues**

#### **12-1. Disclosure of Information**

Both sides confirmed that the Preparatory Survey Report from which project cost is excluded will be disclosed to the public after completion of the Preparatory Survey. The comprehensive report including the project cost will be disclosed to the public after all the contracts under the Project are concluded.

#### **12-2. Expansion of Distribution Network and Operational Priority of WTP**

Both sides reconfirmed that MISTI will put a priority on maximizing operational ratio or run in full capacity of the WTP to be granted by Japan to provide water to the Project site. Also, MISTI promised to install distribution pipe network in additional 4 communes as soon as possible with the best effort. The existing pipes are already included in the calculation of design under JICA project, therefore MISTI explained that any existing pipes would not be utilized for the other projects, and those projects would install additional pipes separately.

#### **12-3. Intake Water Rights**

Both sides confirmed that MISTI obtained additional water right for taking water from Vay Kor dam, from Ministry of Water Resources and Meteorology (MOWRAM), under the approval letter dated 12<sup>th</sup> July 2021.



#### **12-4. Assurance of Sustainability of Vay Kor Dam**

Both sides understand that water source management and balancing including dam development and maintenance are the responsibility of MOWRAM. Therefore, both sides reconfirmed that MISTI would closely work with MOWRAM to maintain the water level of the Vay Kor Dam for keeping sufficient water source for the water intake and to take necessary actions for prompt recovery of the water level in case of any incident. In addition, MISTI explained to the team that approval of water right from MOWRAM as per 12-3 means that MOWRAM assures MISTI(applicant) that MOWRAM will keep the water level of Vay Kor Dam enough for water intake.

#### **12-5. Financial Soundness and Appropriate Water Tariff**

The Team strongly recommended to revise the water tariff from the current 1,200 Riel/m<sup>3</sup> to 1,580 Riel/m<sup>3</sup> in order to ensure the financial soundness of the SWWs while maintaining the operation and maintenance of the facilities, in order to realize sustainable water supply services. The Cambodian side understood the importance of the tariff revision, and confirmed to take necessary procedure by 2024. Notwithstanding the importance of the tariff revision, in the unlikely event that the revision cannot be implemented on schedule, MISTI will take responsibility for supplementing the budget required to operate the facility.

#### **12-6. Increasing the number of water service connections**

Cambodian side will be expected to complete seven thousand three hundred seventy eight (7,378) service connections including poor household, under the Project. Both sides confirmed that it is important to carry out the connections as planned, to maximize the benefit for the people from the Project. In order to ensure smooth implementation, Cambodian side agreed to mobilize temporary construction team for the service connections from 2022 to 2027. Expected number of connection for each year is 500 households (HHs) in 2022, 500 HHs in 2023, 500 HHs in 2024, 1,878 HHs in 2025, 2,000 HHs in 2026, 2000 HHs in 2027. Both sides also confirmed that facilitating connections also means increasing revenue for the water utility, which is important for sound management of the water utility. MISTI will report annually to JICA Cambodia Office the progress of the connection increase, using the template in Annex 5.





**12-7. Official permission for land use of intake**

To acquire land use permit at the intake point, the SWWs should apply to the Provincial Government via Department of Industry, Science, Technology and Innovation (DISTI), so that approval can be obtained.

The Cambodian side agreed to proceed the above process by August 2022.

**12-8. Official permission for the construction of WTP and the intake facility**

The SWWs should apply to the Provincial Government via Department of Industry, Science, Technology and Innovation (DISTI), so that the approval on the construction of the WTP and intake facility can be obtained.

The Cambodian side agreed to proceed the above process by August 2022.

**12-9. Land Acquisition for WTP, Ground Leveling for WTP and Intake Facility**

Land for the WTP was acquired in December 2017. The intake pump station will be installed in public land along National Highway No. 1, which crosses the lake. The land on which the WTP and water intake facility will be built need to be leveled before starting the construction. The Cambodian side agreed to implement necessary ground levelling by August 2022.

**12-10. Recruitment of new staff**

Considering the sustainable operation and maintenance of the provided new facility, Cambodian side is requested to recruit twenty-two (22) new staff by 2027. Break down of the new staffs is described in the Annex 2.

Cambodian side agreed to secure enough staff and budget for appropriate operation and maintenance of the facilities.

**12-11. Additional licence for SUMS**

As the number of water service connections increases by the Project, the amount of work involved in issuing invoices and processing payments will increase, thus additional software licenses for Synergistic Utilities Management System (SUMS) will be procured under the Project. The Cambodian side agreed to be responsible for renewing the licenses.

END



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Annex 1 Project Site

Annex 2 Organization Chart

Annex 3 Project Implementation Schedule

Annex 4 Major Undertakings to be taken by the Government of Cambodia

Annex 5 Project Monitoring Report (template)

Annex 6 Environmental Check List

Annex 7 Environmental Management Plan/Environmental Monitoring Plan

Annex 8 Environmental and Social Monitoring Form

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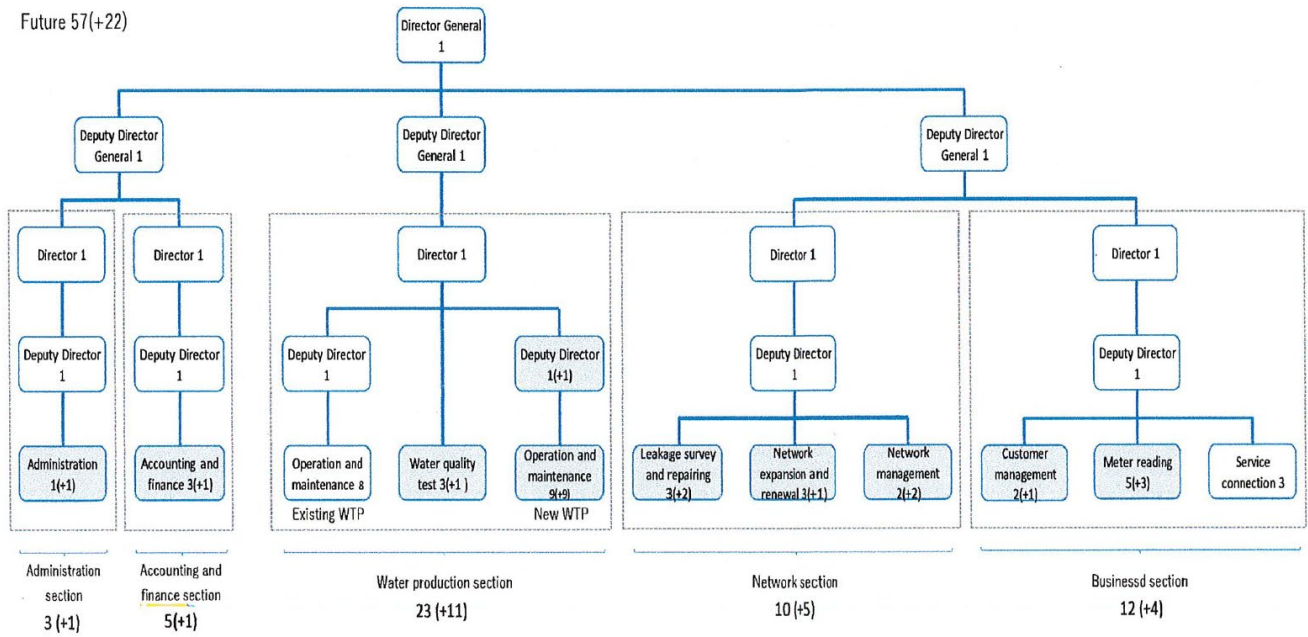


**[Annex1 Project Site]**



## 【Annex 2 Organization Chart】

Future 57(+22)

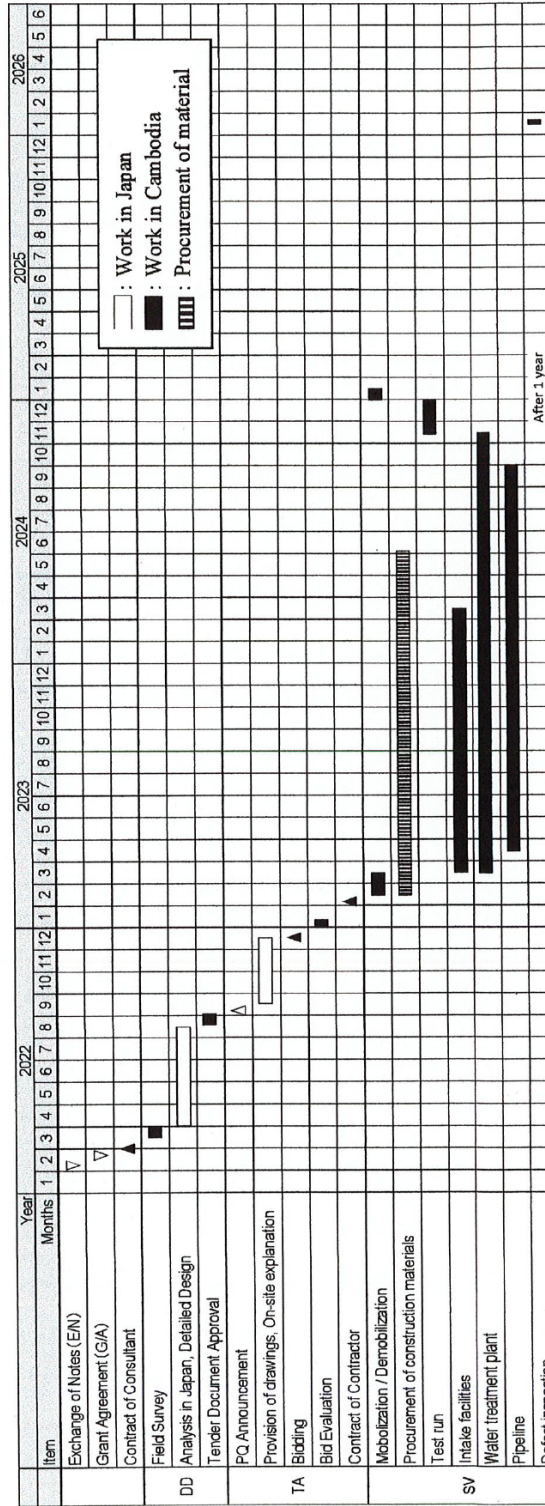


\* Highlighted sections/positions are expected to increase the number of staff.

\* Proposed increased number of staff is noted in brackets.

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**【Annex 3 Project Implementation Schedule】**



DD: Detailed Design, TA: Tender Assistance, SV: Supervision



**【Annex 4 Major Undertakings to be taken by the Government of Cambodia】**

**1. Specific Obligations of the Government of Cambodia which will not be funded with the Grant**

**(1) Before the Tender**

No	Items	Deadline	In charge	Estimated Cost
1	To open bank account (B/A) <sup>*1)</sup>	within 1 month after the signing of the G/A <sup>*5)</sup>	MEF <sup>*6)</sup>	\$4,421
2	To issue A/P <sup>*2)</sup> to a bank in Japan (the Agent Bank) for the payment to the Consultant	within 1 month after the signing of the contract(s)	MISTI <sup>*7)</sup>	
3	To contract land lease in order to secure the temporary yard	before notice of the bidding document(s)	MISTI	\$50,000
4	To obtain the planning, zoning, building permit	before notice of the bidding document(s)	MISTI	
5	To clear, level and reclaim the following sites. Embankment at proposed WTP <sup>*3)</sup> site and intake pump station site.	before notice of the bidding document(s)	MISTI	\$496,340
6	To explore landmines and UXO <sup>*4)</sup> at construction site and temporary yard.	before notice of the bidding document(s)	MISTI	\$22,104
7	To submit Project Monitoring Report (with the result of Detail Design)	before notice of the bidding document(s)	MISTI	

Note : \*1) B/A : Banking Arrangement, \*2) A/P : Authorization to Pay, \*3) WTP : Water Treatment Plant, \*4) UXO : Unexploded Ordnance, \*5) G/A : Grant Agreement, \*6) MEF: Ministry of Economic and Finance, \*7) MISTI: Ministry of Industry, Science, Technology & Innovation

**(2) During the Project Implementation**

No	Items	Deadline	In charge	Estimated Cost
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)	MISTI	\$4,421
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)	MISTI	
	(2) Payment commission for A/P	every payment	MEF	\$13,262
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	MISTI	
4	To accord the 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 as may be necessary, for their entry into the country of the Recipient and stay therein for the performance of their work	during the Project	MISTI	
5	To ensure that customs duties, internal taxes and other fiscal levies which may be imposed in the country of the Recipient with respect to the purchase of the products and/or the services be exempted.	during the Project	MISTI	
6	To bear all the expenses, other than those covered by the Grant, necessary for the implementation of the Project	during the Project	MISTI	



No	Items	Deadline	In charge	Estimated Cost
7	To submit Project Monitoring Report	every month	MISTI	
	To submit Project Monitoring Report (final)	within one month after signing of Certificate of Completion for the works under the contract(s)	MISTI	
8	To submit a report concerning completion of the Project	within six months after completion of the Project	MISTI	
9	To get permit for construction of temporary access roads for laying water pipes and lease necessary land for approach roads	1 month before the start of the construction	Local Communities, MISTI	
10	To provide facilities for distribution of electricity, water supply and drainage and other incidental facilities necessary for the implementation of the Project to the site(s)		MISTI	
	(1) Electricity The distributing line to the main road near the proposed facility	before start of the construction		\$38,424
	(2) Electricity The distributing line from the main road to the site of proposed facility	2 months before the commissioning test		
	(3) Information System Contract of Internet line and GPRS*1) line for the remote monitoring and control system for intake facility and distribution monitoring system	2 months before completion of the construction		\$4,421
11	To take necessary measures for safety construction - traffic control - rope off	during the construction	MISTI	
12	To implement EMP*2) and EMOP*3)	during the construction	MISTI	
13	To ensure the safety of persons engaged in the implementation of the Project	during the Project	MISTI	
14	To submit results of environmental monitoring to JICA *4), by using the monitoring form, on a quarterly basis as a part of Project Monitoring Report	during the construction	MISTI	
15	To obtain permission for occupancy of roads for the pipe laying work	before start of the construction for conveyance, transmission, and distribution pipes	MISTI (WWs)*5)	
16	To obtain all permissions required for the project implementation such as construction permission for intake facility and the WTP	before start of the construction	MISTI (WWs)	
17	To conduct service pipe connection work during the project implementation	during the construction	MISTI (WWs)	\$4,439
18	To recruit new staff members who are necessary for the operation of new system	up to the end of 2027 Since it is difficult to hire the necessary personnel at once, it is desirable to hire them in stages from 2022.	MISTI (WWs)	
19	To establish the construction scheme for the new service pipe connections, including hiring temporary work force. To carry out the technical guidance, budgeting, planning and publicity for	up to the end of 2027	MISTI (WWs)	

No	Items	Deadline	In charge	Estimated Cost
	enhancing new connections.			
20	To identify poor household	up to the end of 2027	MISTI (WWs)	

Note : \*1) GPRS : General Packet Radio Service, \*2) EMP : Environmental Management Plan, \*3) EMOP : Environmental Monitoring Plan, \*4) JICA : Japan International Cooperation Agency, \*5) WWs: Waterworks,

### (3) After Project Completion

No	Items	Deadline	In charge	Estimated Cost
1	To implement EMP and EMOP	for a period based on EMP and EMOP	MISTI	\$8,842
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 MISTI and JICA	for three years after the Project	MISTI	
3	To maintain and use properly and effectively the facilities constructed and equipment provided under the Grant Aid (1) Allocation of maintenance cost (2) Operation and maintenance structure (3) Routine check/Periodic inspection	After completion of the construction	MISTI	
4	To conduct service pipe connection work after the project completion continuously (1) Establishment of construction scheme including hiring temporary staff for service connection work, providing guidance, budgeting, planning and publicity for enhancing new connections. (2) Connection for poor household - Material is procured by Japanese side, connection work is conducted by Cambodian side. (3) Connection for household without poverty group - Material and connection work is under responsibility of Cambodian side. (4) To report the results of service pipe connection work to JICA every year	up to the end of 2027	MISTI (WWs)	\$21,555

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**2. Other obligations of the Government of Cambodia funded with the Grant**

No	Items	Deadline	Amount (Million Japanese Yen)*
1	1) To conduct the following transportation a) Marine(Air) transportation of the products from Japan to the country of the Recipient b) Internal transportation from the port of disembarkation to the project site 2) To construct pavement of in-plant road 3) To construct the temporary building 4) To provide facilities for the distribution of electricity, drainage and other incidental facilities 5) To provide facilities for water supply a) New intake facility - Inlet channel with gate - Pump station building - Administration building - Installation of two (2) intake pumps (including one backup pump) - Electrical facility b) Conveyance pipe laying c) New water treatment plant - Rapid stirring basin - Flocculation basin - Rectangular sedimentation basins - Rapid filtration basins - Distribution reservoir - Distribution pumps with flow control devices - Electric facility, administration building for chemical liquid injection, chlorine injection building, lagoons d) Laying distribution pipes Water reservoir e) Procurement of Equipment - Water quality analysis equipment - Machinery equipment - Accounting system equipment - Equipment and materials for house connection f) Soft components - Operation and maintenance of water treatment facilities - Maintenance of distribution facilities - Production management	project completion	
2	To implement detailed design, bidding support and construction supervision (Consulting Service)		
3	Contingencies		
	Total		

\* The Amount is provisional. This is subject to the approval of the Government of Japan.

**【Annex 5 Project Monitoring Report (template)】**

G/A NO. XXXXXXXX  
 PMR prepared on DD/MM/YY

**Organizational Information**

1) 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	
E/N	Signed date: Duration:
G/A	Signed date: Duration:
Source of Finance	Government of Japan: Not exceeding JPY _____ mil. Government of (_____): _____





**1: Project Description**

**1-1 Project Objective**

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**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

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**1-3 Indicators for measurement of "Effectiveness"**

Quantitative indicators to measure the attainment of project objectives		
Indicators	Original (Yr )	Target (Yr )
Qualitative indicators to measure the attainment of project objectives		

**2: Details of the Project**

**2-1 Location**

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

**2-2 Scope of the work**

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

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>	

Reasons for any changes of the schedule, and their effects on the project (if any)

**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 <i>(proposed in the outline design)</i>	Actual <i>(in case of any modification)</i>	Original <sup>1),2)</sup> <i>(proposed in the outline design)</i>	Actual
	1.			
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 Taka)	
	Original <i>(proposed in the outline design)</i>	Actual <i>(in case of any modification)</i>	Original <sup>1),2)</sup> <i>(proposed in the outline design)</i>	Actual
	1.			

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

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.

**Original** *(at the time of outline design)*

name:  
 role:  
 financial situation:  
 institutional and organizational arrangement (organogram):  
 human resources (number and ability of staff):

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**Actual** (PMR)

**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.)

<b>Original</b> <i>(at the time of outline design)</i>
<b>Actual</b> <i>(PMR)</i>

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

<b>Original</b> <i>(at the time of outline design)</i>
<b>Actual</b> <i>(PMR)</i>

**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. (Description of Risk)	Probability: High/Moderate/Low



	Impact: High/Moderate/Low
	Analysis of Probability and Impact:
	Mitigation Measures:
	Action required during the implementation stage:
2. (Description of Risk)	Probability: High/Moderate/Low
	Impact: High/Moderate/Low
	Analysis of Probability and Impact:
	Mitigation Measures:
	Action required during the implementation stage:
3. (Description of Risk)	Probability: High/Moderate/Low
	Impact: High/Moderate/Low
	Analysis of Probability and Impact:
	Mitigation Measures:
	Action required during the implementation stage:
<b>Actual Situation and Countermeasures</b>	
(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.

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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)

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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 x B	1% of Contract Price D	Condition of payment	
					Price (Decreased) E=C-D	Price (Increased) F=C+D
1 Item 1	●●t	●	●	●	●	●
2 Item 2	●●t	●	●	●		
3 Item 3						
4 Item 4						
5 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
1 Item 1	●	●	●			
2 Item 2						
3 Item 3						
4 Item 4						
5 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	(A/D%)	(B/D%)	(C/D%)	
Cost				
others	(A/D%)	(B/D%)	(C/D%)	
Equipment Cost	(A/D%)	(B/D%)	(C/D%)	
Design and Supervision	(A/D%)	(B/D%)	(C/D%)	
Cost				
Total	(A/D%)	(B/D%)	(C/D%)	

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**【Annex 6 Environmental Check List】**

Category	Environmental Item	Main Check Items	Yes: Y No: N	Specific Environmental and Social Considerations (Reason for Yes or No, rationale, mitigation measures, etc.)
1 Approvals, explanations	(1) EIA and Environmental Permits	(a) Have EIA reports been already prepared in official process? (b) Have EIA reports been approved by authorities of the host country's government? (c) Have EIA reports been unconditionally approved? If conditions are imposed on the approval of EIA reports, are the conditions satisfied? (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?	(a) Y (b) Y (c) N (d) Y	(a) (b) MISTI submitted the report pursuant to the requirement to MOE. MOE inspected and approved the report, and the EPC was agreed on March 30, 2021. (c) No conditions. (d) MISTI will obtain official permission letter of water extraction from Vay Kor Lake by MOWRAM by December 2021, and permission letter of construction of water intake by Provincial Hall.
	(2) Explanation to the Local Stakeholders	(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? (b) Have the comment from the stakeholders (such as local residents) been reflected to the project design?	(a) Y (b) Y	(a) All related departments of the development project understood the project purpose and contents, and they agreed on the implementation. At the public hearing, the villagers welcomed the project. They wished the early project start. There is no particular objection. (b) The design of the intake facility is considered for the suitable appearance to meet the lake environment with comments from Provincial Hall. The water intake is designed with the consideration to prevent fish invasion by the request from the DOE.
	(3) Examination of Alternatives	(a) Have multiple alternative plans for the Project been analyzed? (Including analysis of items related to the environment/society.)	(a) Y	(a) Alternatives have been examined for the water source, site selection of intake and WTP, and extent of the supply area.
2 Pollution Measures	(1) Air Quality	(a) Is there a possibility that chlorine from chlorine storage facilities and chlorine injection facilities will cause air pollution? Are any mitigating measures taken? (b) Do chlorine concentrations within the working environments comply with the country's occupational health and safety standards?	(a) N (b) Y	(a) The Project plans to use breaching power for disinfection. This reagent is stable, and occurrence of air pollution is considered less. The exhaust fan will be situated at the facilities of disinfection. (b) The above measures serve to keep appropriate working condition.
	(2) Water Quality	(a) Do pollutants, such as SS, BOD, COD contained in effluents discharged by the facility operations comply with the	(a) N/A	Discharge generated at the treatment process will be recycled, and sludge will be dried. Therefore, any effluent from

Category	Environmental Item	Main Check Items	Yes: Y No: N	Specific Environmental and Social Considerations (Reason for Yes or No, rationale, mitigation measures, etc.)
		country's effluent standards?		treatment process will not be generated. Sewage will be treated by septic tanks and clear upper portion will be infiltrated into ground. Therefore, the discharge water is not generated.
	(3) Wastes	(a) Are wastes, such as sludge generated by the facility operations properly treated and disposed in accordance with the country's regulations?	(a) Y	(a) Sludge will be treated and dried at dry-bed, then dry sludge will be disposed at an appropriate site with the permission of the landowner. MISTI is responsible for the arrangement.
	(4) Noise and vibration	(a) Do noise and vibrations generated from the facilities, such as pumping stations comply with the country's standards?	(a) Y	(a) The pump will be installed at basement made by the RC with the noise reducing walls. The noise will be controlled within the limit of GOC requirement. So, the noise and vibration will be controlled in permissible limit by the above measures.
	(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?	(a) N	(a) The Project does not use groundwater.
3 Natural Environment	(1) Protected areas	(a) Is the project site or discharge area 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?	(a) Y	(a) The Vay Kor Lake is divided in two parts by the national road No.1. The intake will be constructed at the upper side but the lower side is designated as protected area for the protection of fishery resources. The measures will be taken to prevent the occurrence of turbid water during construction. In addition, education and training will be provided to the workers not to do the fishing activities. In the design of the water intake, a bar screen will be installed, and the maximum inflow speed is set to 0.1 m / s or less, which is extremely slow, to prevent fish from entering. With the above measures, the impact of project implementation can be avoided.
	(2) Ecosystems	(a) Does the project site encompass primeval forests, tropical rain forests, ecologically valuable habitats (e.g., coral reefs, mangroves, or tidal flats)? (b) Does the project site or discharge area encompass the protected habitats of	(a) N (b) N (c) N (d) N	(a) The site does not contain any virgin forests, tropical old-growth forests, or important ecological habitats. (b) No habitats for any rare species are present in the site. (c) No major concerns.

Category	Environmental Item	Main Check Items	Yes: Y No: N	Specific Environmental and Social Considerations (Reason for Yes or No, rationale, mitigation measures, etc.)
		<p>endangered species designated by the country's laws or international treaties and conventions?</p> <p>(c) If significant ecological impacts are anticipated, are adequate protection measures taken to reduce the impacts on the ecosystem?</p> <p>(d) Is there a possibility that the amount of water used (e.g., surface water, groundwater) by project will adversely affect aquatic environments, such as rivers? Are adequate measures taken to reduce the impacts on aquatic environments, such as aquatic organisms?</p>		(d) No major concerns
	(3) Hydrology	(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?	(a) N	(a) Impact on groundwater is not expected. The amount of water taken from the lake is small compared to the amount of the capacity, and the effect on surface water is limited.
4. Social Environment	(1) Resettlement	<p>(a) Is involuntary resettlement caused by project implementation? If involuntary resettlement is caused, are efforts made to minimize the impacts caused by the resettlement?</p> <p>(b) Is adequate explanation on compensation and resettlement assistance given to affected people prior to resettlement?</p> <p>(c) Is the resettlement plan, including compensation with full replacement costs, restoration of livelihoods and living standards developed based on socioeconomic studies on resettlement?</p> <p>(d) Are the compensations going to be paid prior to the resettlement?</p> <p>(e) Are the compensation policies prepared in document?</p> <p>(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?</p> <p>(g) Are agreements with the affected people obtained prior to resettlement?</p> <p>(h) Is the organizational framework established to properly implement</p>	<p>(a) N</p> <p>(b) N/A</p> <p>(c) N/A</p> <p>(d) N/A</p> <p>(e) N/A</p> <p>(f) N/A</p> <p>(g) N/A</p> <p>(h) N/A</p> <p>(i) N/A</p> <p>(j) N/A</p>	<p>(a) SWW purchased about 1ha of land for the WTP from the landowner. The land was agricultural land and there were no authorized/unauthorized residents, and there is no relocation of residents.</p> <p>(b) Land sales were conducted in the presence of the village chief and sufficient explanations were given.</p> <p>(c) The sale price of land is about 1.2 times the price of the surrounding land and is considered to be the replacement price.</p> <p>(d) SWW already paid the full amount.</p> <p>(e) Conducted as a general land sale.</p> <p>(F) The landowner is a farmer, and his family (wife only) participated the contract process and agreed to the sales contract.</p> <p>(g) No relocation occurred.</p> <p>(h) DISTI and the village chief were involved, and land sales were carried out appropriately.</p> <p>(i) The full contract amount has already been paid and no monitoring is performed.</p> <p>(j) If there is a complaint, it will be</p>

Category	Environmental Item	Main Check Items	Yes: Y No: N	Specific Environmental and Social Considerations (Reason for Yes or No, rationale, mitigation measures, etc.)
		resettlement? Are the capacity and budget secured to implement the plan? (i) Are any plans developed to monitor the impacts of resettlement? (j) Is the grievance redress mechanism established?		communicated to DISTI or MISTI via the village chief, but no complaint has occurred in this sale.
	(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? (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?	(a) N (b) N	(a) The project has positive impact to improve basic human needs. There is no particular negative impact. (b) The Svay Rieng River has enough discharge capacity and the intake of water supply does not affect significantly.
	(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?	(a) N	(a) No anthropological, historical, cultural, religiously important heritages or historical remains have been identified in the project site.
	(4) Landscape	(a) Is there a possibility that the project will adversely affect the local landscape? Are necessary measures taken?	(a) N	(a) The intake will be constructed at the roadside, and it will be designed to be harmonized with the environment to meet the request of the stakeholders.
	(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?	(a) N/A (b) N/A	(a)(b) There are no ethnic minorities or indigenous peoples living near the project site.
	(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) Y (b) Y (c) Y (d) Y	(a) Adherence to laws concerning working conditions will be made explicit in contracts with contractors and managed. (b) Countermeasures such as installation of safety handrail are taken. (c) It will be achieved to set as an obligation of contractor in contract document. (d) Security guards will be included in target members of worker training.

Category	Environmental Item	Main Check Items	Yes: Y No: N	Specific Environmental and Social Considerations (Reason for Yes or No, rationale, mitigation measures, etc.)
		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?		
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)? (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?	(a) Y (b)N (c) Y (d)Y	(a) Mitigation measures will be taken under EPM for managing all noise, vibration, turbid water, dust, gas emissions, and waste discharged from the work site. (b)Particular negative impact is not expected. (c) Temporary traffic disturbance will occur. The negative effect will be minimized by the measures such as setting of detours, assignment of traffic guide, installation of signboard, appropriate information sharing. (d) Since the water intake facility will be constructed along the national highway crossing the lake, the temporary reduction of the number of lanes will be required, and it may cause traffic congestion. The measures to be taken are as described above.
	(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?	(a) Y (b) Y (c) Y (d) Y	(a) MISTI is responsible for the monitoring as in previous similar project which they are experienced. (b) It will be determined in EMoP. (c) Monitoring by proponent is a part of usual operation activities. The training will be given as a part of soft component. (d) It is stipulated in the EMP.

Category	Environmental Item	Main Check Items	Yes: Y No: N	Specific Environmental and Social Considerations (Reason for Yes or No, rationale, mitigation measures, etc.)
6 Focal points	Reference to Checklist of Other Sectors	(a) Where necessary, pertinent items described in the Dam and River Projects checklist should also be checked.	(a) N/A	(a) The intake amount is not much, and the intake structure is small scale at the upper flow of existing headwork. Therefore, it is not necessary to refer the checklist of Dam and River Projects
	Precautions when using the 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).	(a) N	(a) None

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**【Annex 7 Environmental Management Plan/Environmental Monitoring Plan】**

Impact	Parameter	Monitoring Method	Monitoring Point	Frequency	Responsibility	Cost
<b>Construction</b>						
Air Pollution	Dust	Visual observation	Vicinity of construction site	Daily	Contractor	Construction cost
	Exhaust gas	Inspection of registered vehicle	Construction Office	Monthly	Contractor	Construction cost
Noise and vibration	Working time	Working record	Construction site	Daily during construction	Contractor	Construction cost
	Management of vehicles	Inspection of registered vehicles	Construction Office	Monthly	Contractor	Construction cost
	Guidance to operator	Training record	Construction Office	Once during construction	Contractor	Construction cost
Water Pollution and sediment	Turbidity, oil	Visual inspection	Inlet of discharge	Weekly but daily during construction of foundation	Contractor	Construction cost
	Water quality	pH, EC, COD, turbidity, oil	Outlet of discharge	When abnormal incident is observed	Contractor	Construction cost
Solid Waste (domestic)	Proper management	Visual inspection	Domestic waste	Weekly	Contractor	Construction cost
Solid Waste (Construction)	Proper dumping	Visual inspection	Temporary dumping yard	At the time of dumping	Contractor	Construction cost
	Preparation of dumping site	Contract document	Dumping site for soil waste	At the time of contract	SWWs, MISTI	No charge
Ecosystem	Ban of hunting and fishing	Training record	Construction Office	Monthly	Contractor	Construction cost
Hydrology	Construction schedule in rainy season	Monthly construction report	Construction Office	Monthly during rainy season	Contractor	Construction cost
Land and local resource usage	Lease of land	Contract document	Construction Office	At the time of contract of lease	SWWs, MISTI	About 300 USD/month
Existing social infrastructure and services	Mitigation measures to prevent traffic disturbance	Monthly construction report	Construction Office	Monthly	Contractor	Construction cost

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HIV/AIDS and other infectious disease	Management of occupational safety and hygiene	Monthly construction report	Construction Office	Monthly	Contractor	Construction cost
Working condition	Management of occupational safety and hygiene	Monthly construction report	Construction Office	Monthly	Contractor	Construction cost
Accident	Traffic plan of construction vehicle	Plan	Construction Office	At planning	Contractor	Construction cost
	Safety training	Monthly construction report	Construction Office	Monthly	Contractor	Construction cost
Miscellaneous	Complaint management	Analysis of complaint	Construction Office	Monthly	Contractor	Construction cost
Operation						
Waste	Appropriate treatment of sludge	Monitoring record	WTP	Every three months	SWWs	O&M cost
	Preparation of dumping site for sludge	Contract document	SWWs	At the time of contract	SWWs	No charge
Noise and vibration	Monitoring with standard operating procedure (SOP)	SOP and monitoring record	Pumping station	Every three months	SWWs	O&M cost
	Guidance for operators	Training record	Pumping station	Every three months	SWWs	O&M cost

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## 【Annex 8 Environmental and Social Monitoring Form】

### Monitoring Form (Construction)

Construction site (Daily monitoring)

Monitoring Item		Procedure	Result	Measures to be taken	Reference standard	Frequency
Dust		Visual inspection			Acceptable or not	Daily
Noise		Sensory inspection			Acceptable or not	Daily
		Operation time check			Stated operation time in EMP	Daily
Water Quality (turbidity, oil)		Visual inspection			Acceptable or not	Daily (during foundation work)
Water Quality	pH	Laboratory test			6 - 8	Determined by the monitoring result
	EC				80	
	COD				10	
	Turbidity				500	

Construction site (Weekly monitoring)

Monitoring Item	Procedure	Result	Measures to be taken	Reference standard	Frequency
Waste (Domestic)	Patrol			Acceptable or not	Weekly

Construction site (Monthly monitoring)

Monitoring Item	Procedure	Result	Measures to be taken	Reference standard	Frequency
Condition of construction machinery and vehicles	Maintenance record check			Acceptable or not (Exhaust gas, noise, vibration, and usual safety check)	
Traffic management	Patrol			Stated procedure in EMP	Monthly
Accident	Patrol			Acceptable or not	Monthly
Training and educational meetings to worker	Report check			Stated procedure in EMP (frequency, contents, target, etc.)	
Claim and comment	Report check			Acceptable or not	Monthly

Others

Monitoring Item	Procedure	Result	Measures to be taken	Reference standard	Frequency
Land for waste dumping Land for temporary use	Lease condition			Appropriate or not (Size, location, permission (if necessary))	Contract of lease
Plan of safety transportation	Plan check			Acceptable or not	At planning

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**Monitoring Form (Operation)**

Monitoring Item	Procedure	Result	Measures to be taken	Reference standard	Frequency
Waste (treatment sludge)	Patrol			Appropriate or not	Monthly
Land for waste dumping	Procedure check			Appropriate or not (Size, location, permission (if necessary))	At contract agreement
Noise and vibration*	Patrol and maintenance			Normal condition or not	Daily

\*Noise and vibration of pump shall be checked in an operation record every day.

