Bureau of Soils and Water Management

PHILIPPINE BIDDING DOCUMENTS

(As Harmonized with Development Partners)

MAINTENANCE OF SUBMERGED MEMBRANE BIO-REACTOR FOR CY 2023

IB NO: BSWM-2023-01-019

Date issued
January 2023

PHILIPPINE BIDDING DOCUMENTS

Procurement of GOODS

Government of the Republic of the Philippines

Sixth Edition
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Preface

These Philippine Bidding Documents (PBDs) for the procurement of Goods through Competitive Bidding have been prepared by the Government of the Philippines for use by any branch, constitutional commission or office, agency, department, bureau, office, or instrumentality of the Government of the Philippines, National Government Agencies, including Government-Owned and/or Controlled Corporations, Government Financing Institutions, State Universities and Colleges,and Local Government Unit. The procedures and practices presented in this document have been developed through broad experience, and are for mandatory use in projects that are financed in whole or in part by the Government of the Philippines or any foreign government/foreign or international financing institution in accordance with the provisions of the 2016 revised Implementing Rules and Regulations of Republic Act No. 9184.

The Bidding Documents shall clearly and adequately define, among others: (i) the objectives, scope, and expected outputs and/or results of the proposed contract or Framework Agreement, as the case may be; (ii) the eligibility requirements of Bidders; (iii) the expected contract or Framework Agreement duration, the estimated quantity in the case of procurement of goods, delivery schedule and/or time frame; and (iv) the obligations, duties, and/or functions of the winning bidder.

Care should be taken to check the relevance of the provisions of the PBDs against the requirements of the specific Goods to be procured. If duplication of a subject is inevitable in other sections of the document prepared by the Procuring Entity, care must be exercised to avoid contradictions between clauses dealing with the same matter.

Moreover, each section is prepared with notes intended only as information for the Procuring Entity or the person drafting the Bidding Documents. They shall not be included in the final documents. The following general directions should be observed when using the documents:

a. All the documents listed in the Table of Contents are normally required for the procurement of Goods. However, they should be adapted as necessary to the circumstances of the particular Procurement Project.

b. Specific details, such as the "*name of the Procuring Entity*" and "*address for bid submission*," should be furnished in the Instructions to Bidders, Bid Data Sheet, and Special Conditions of Contract. The final documents should contain neither blank spaces nor options.

c. This Preface and the footnotes or notes in italics included in the Invitation to Bid, Bid Data Sheet, General Conditions of Contract, Special Conditions of Contract, Schedule of Requirements, and Specifications are not part of the text of the final document, although they contain instructions that the Procuring Entity should strictly follow.

d. The cover should be modified as required to identify the Bidding Documents as to the Procurement Project, Project Identification Number, and Procuring Entity, in addition to the date of issue.

e. Modifications for specific Procurement Project details should be provided in the Special Conditions of Contract as amendments to the Conditions of Contract. For easy completion, whenever reference has to be made to specific clauses in the Bid Data Sheet or Special Conditions of Contract, these terms shall be printed in bold typeface on Sections I (Instructions to Bidders) and III (General Conditions of Contract), respectively.

f. For guidelines on the use of Bidding Forms and the procurement of Foreign-Assisted Projects, these will be covered by a separate issuance of the Government Procurement Policy Board.

Table of Contents

Glossary of Acronyms, Terms, and Abbreviations

ABC –Approved Budget for the Contract.

BAC – Bids and Awards Committee.

Bid – A signed offer or proposal to undertake a contract submitted by a bidder in response to and in consonance with the requirements of the bidding documents. Also referred to as *Proposal* and *Tender.*(2016 revised IRR, Section 5[c])

Bidder – Refers to a contractor, manufacturer, supplier, distributor and/or consultant who submits a bid in response to the requirements of the Bidding Documents. (2016 revised IRR, Section 5[d])

Bidding Documents – The documents issued by the Procuring Entity as the bases for bids, furnishing all information necessary for a prospective bidder to prepare a bid for the Goods, Infrastructure Projects, and/or Consulting Services required by the Procuring Entity. (2016 revised IRR, Section 5[e])

BIR – Bureau of Internal Revenue.

BSP – BangkoSentral ng Pilipinas.

Consulting Services – Refer to services for Infrastructure Projects and other types of projects or activities of the GOP requiring adequate external technical and professional expertise that are beyond the capability and/or capacity of the GOP to undertake such as, but not limited to: (i) advisory and review services; (ii) pre-investment or feasibility studies; (iii) design; (iv) construction supervision; (v) management and related services; and (vi) other technical services or special studies. (2016 revised IRR, Section 5[i])

CDA - Cooperative Development Authority.

Contract – Refers to the agreement entered into between the Procuring Entity and the Supplier or Manufacturer or Distributor or Service Provider for procurement of Goods and Services; Contractor for Procurement of Infrastructure Projects; or Consultant or Consulting Firm for Procurement of Consulting Services; as the case may be, as recorded in the Contract Form signed by the parties, including all attachments and appendices thereto and all documents incorporated by reference therein.

CIF – Cost Insurance and Freight.

CIP – Carriage and Insurance Paid.

CPI – Consumer Price Index.

DDP – Refers to the quoted price of the Goods, which means “delivered duty paid.”

DTI – Department of Trade and Industry.

EXW – Ex works.

FCA – "Free Carrier" shipping point.

FOB – "Free on Board" shipping point.

Foreign-funded Procurement or Foreign-Assisted Project–Refers to procurement whose funding source is from a foreign government, foreign or international financing institution as specified in the Treaty or International or Executive Agreement. (2016 revised IRR, Section 5[b]).

Framework Agreement – Refers to a written agreement between a procuring entity and a supplier or service provider that identifies the terms and conditions, under which specific purchases, otherwise known as "Call-Offs," are made for the duration of the agreement. It is in the nature of an option contract between the procuring entity and the bidder(s) granting the procuring entity the option to either place an order for any of the goods or services identified in the Framework Agreement List or not buy at all, within a minimum period of one (1) year to a maximum period of three (3) years. (GPPB Resolution No. 27-2019)

GFI – Government Financial Institution.

GOCC –Government-owned and/or –controlled corporation.

Goods – Refer to all items, supplies, materials and general support services, except Consulting Services and Infrastructure Projects, which may be needed in the transaction of public businesses or in the pursuit of any government undertaking, project or activity, whether in the nature of equipment, furniture, stationery, materials for construction, or personal property of any kind, including non-personal or contractual services such as the repair and maintenance of equipment and furniture, as well as trucking, hauling, janitorial, security, and related or analogous services, as well as procurement of materials and supplies provided by the Procuring Entity for such services. The term "related" or "analogous services" shall include, but is not limited to, lease or purchase of office space, media advertisements, health maintenance services, and other services essential to the operation of the Procuring Entity. (2016 revised IRR, Section 5[r])

GOP – Government of the Philippines.

GPPB –Government Procurement Policy Board.

INCOTERMS – International Commercial Terms.

Infrastructure Projects – Include the construction, improvement, rehabilitation, demolition, repair, restoration or maintenance of roads and bridges, railways, airports, seaports, communication facilities, civil works components of information technology projects, irrigation, flood control and drainage, water supply, sanitation, sewerage and solid waste management systems, shore protection, energy/power and electrification facilities, national

buildings, school buildings, hospital buildings, and other related construction projects of the government. Also referred to as *civil works or works*. (2016 revised IRR, Section 5[u])

LGUs – Local Government Units.

NFCC – Net Financial Contracting Capacity.

NGA – National Government Agency.

PhilGEPS - Philippine Government Electronic Procurement System.

Procurement Project – refers to a specific or identified procurement covering goods, infrastructure project or consulting services. A Procurement Project shall be described, detailed, and scheduled in the Project Procurement Management Plan prepared by the agency which shall be consolidated in the procuring entity's Annual Procurement Plan. (GPPB Circular No. 06-2019 dated 17 July 2019)

PSA – Philippine Statistics Authority.

SEC – Securities and Exchange Commission.

SLCC – Single Largest Completed Contract.

Supplier – refers to a citizen, or any corporate body or commercial company duly organized and registered under the laws where it is established, habitually established in business and engaged in the manufacture or sale of the merchandise or performance of the general services covered by his bid. (Item 3.8 of GPPB Resolution No. 13-2019, dated 23 May 2019). Supplier as used in these Bidding Documents may likewise refer to a distributor, manufacturer, contractor, or consultant.

UN – United Nations.

Section I. Invitation to Bid

Notes on the Invitation to Bid

The Invitation to Bid (IB) provides information that enables potential Bidders to decide whether to participate in the procurement at hand. The IB shall be posted in accordance with Section 21.2 of the 2016 revised IRR of RA No. 9184.

Apart from the essential items listed in the Bidding Documents, the IB should also indicate the following:

a. The date of availability of the Bidding Documents, which shall be from the time the IB is first advertised/posted until the deadline for the submission and receipt of bids;

b. The place where the Bidding Documents may be acquired or the website where it may be downloaded;

c. The deadline for the submission and receipt of bids; and

d. Any important bid evaluation criteria (*e.g.*, the application of a margin of preference in bid evaluation).

The IB should be incorporated in the Bidding Documents. The information contained in the IBmust conform to the Bidding Documents and in particular to the relevant information in the Bid Data Sheet.

Republic of the Philippines
Department of Agriculture
BUREAU OF SOILS AND WATER MANAGEMENT
SRDC Bldg., Elliptical Road corner Visayas Avenue,
Diliman, Quezon City

INVITATION TO BID
MAINTENANCE OF SUBMERGED MEMBRANE BIO-REACTOR FOR CY 2023- IB NO: BSWM-2023-01-019

1. The Bureau of Soils and Water Management, through the **General Appropriation Act for CY 2023** intends to apply the sum of **Two Million Five Hundred Thousand Pesos (Php 2,500,000.00)** being the ABC to payments under the contract for **MAINTENANCE OF SUBMERGED MEMBRANE BIO-REACTOR FOR CY 2023- IB NO: BSWM-2023-01-019.** Bids received in excess of the ABC shall be automatically rejected at bid opening.

2. The Bureau of Soils and Water Management now invites bids for the above Procurement Project. **Delivery of the Services is required on March- November 2023.** Bidders should have completed, **within two (2) consecutive years** from the date of submission and receipt of bids, a contract similar to the Project. The description of an eligible bidder is contained in the Bidding Documents, particularly, in Section II (Instructions to Bidders).

3. Bidding will be conducted through open competitive bidding procedures using a non-discretionary "pass/fail" criterion as specified in the 2016 revised Implementing Rules and Regulations (IRR) of Republic Act (RA) No. 9184.

   Bidding is restricted to Filipino citizens/sole proprietorships, partnerships, or organizations with at least sixty percent (60%) interest or outstanding capital stock belonging to citizens of the Philippines, and to citizens or organizations of a country the laws or regulations of which grant similar rights or privileges to Filipino citizens, pursuant to RA 5183.

4. Prospective Bidders may obtain further information from BUREAU OF SOILS AND WATER MANAGEMENT – BIDS AND AWARDS COMMITTEE SECRETARIAT'S OFFICE and inspect the Bidding Documents at the address given below during **MONDAY TO FRIDAY, 8:00AM TO 5:00PM EXCEPT ON DECLARED HOLIDAYS OR WORK SUSPENSION.**

5. A complete set of Bidding Documents may be acquired by interested Bidders on **January 16- February 8, 2023, 9:00AM** from the address and website below and upon payment of the applicable fee for the Bidding Documents, pursuant to the latest Guidelines issued by the GPPB, in the amount of Php 2,000.00. The Procuring Entity shall allow the bidder to present its proof of payment for the fees to BAC Secretariat on or before the deadline of Submission and Opening of Bids.

6. The BUREAU OF SOILS AND WATER MANAGEMENT will hold a **Pre-Bid Conference** on **January 26, 2023 9:30AM at BSWM Convention Hall** shall be open to prospective bidders. Pre-Bid Conference will be available **"live"** thru **BSWM Procurement Service FB Page (https://www.facebook.com/bswmpms).** Furthermore, all interested bidders can participate through videoconferencing. Please coordinate with BAC Secretariat at least a day before the meeting at bac@bswm.da.gov.ph .

7. **Bids must be duly received** by the BAC Secretariat through manual submission at the office address indicated below on or before **February 9, 2023, 9:00AM**. Late bids shall not be accepted.
8. All Bids must be accompanied by a bid security in any of the acceptable forms and in the amount stated in ITB Clause 16.

9. **Bid opening shall be on February 9, 2023, 1:30PM** at the at **BSWM CONVENTION HALL**, 2ND FLOOR, SRDC BLDG., VISAYAS AVE. COR. ELLIPTICAL ROAD, DILIMAN, QUEZON CITY and through videoconferencing/webcasting via ZOOM and streamed live through BSWM Procurement Service Facebook Page. Bids will be opened in the presence of the bidders' representatives who choose to attend the activity.

   During the opening of bids, Bidder's representative must present his/her Company Identification Card and Authorization Letter from the Head of the Company.

10. Schedules of the above-mentioned bidding is subject to change due to the Community Quarantine enforced by the government in line with the COVID-19 pandemic. Please refer to the BSWM PhilGEPS posting for updates (https://www.philgeps.gov.ph/) and BSWM Procurement Service FB Page (https://www.facebook.com/bswmpms).

11. The BUREAU OF SOILS AND WATER MANAGEMENT reserves the right to reject any and all bids, declare a failure of bidding, or not award the contract at any time prior to contract award in accordance with Sections 35.6 and 41 of the 2016 revised IRR of RA No. 9184, without thereby incurring any liability to the affected bidder or bidders.

12. For further information, please refer to:
    DENISE A. SOLANO
    BIDS AND AWARDS COMMITTEE SECRETARIAT'S OFFICE
    2ND FLOOR, SRDC BLDG.,
    VISAYAS AVE. COR. ELLIPTICAL ROAD, DILIMAN, QUEZON CITY
    TELEFAX NUMBER: +63-2-8273-2474 loc 3218
    EMAIL ADDRESS: bac@bswm.da.gov.ph or bswm.bacsec@gmail.com WEBSITE: www.bswm.gov.ph
    FB Page: https://www.facebook.com/bswmpms

    You may visit the following websites:
    For downloading of Bidding Documents:
    PhilGEPS- https://notices.philgeps.gov.ph/, BSWM Website- www.bswm.gov.ph or BSWM Procurement Service Facebook Page- https://www.facebook.com/bswmpms .

    January 12, 2023

ENGR. EDUARDO V. ALBERTO
Chairperson, Bids and Awards Committee

Section II. Instructions to Bidders

Notes on the Instructions to Bidders

This Section on the Instruction to Bidders (ITB) provides the information necessary for bidders to prepare responsive bids, in accordance with the requirements of the Procuring Entity. It also provides information on bid submission, eligibility check, opening and evaluation of bids, post-qualification, and on the award of contract.

1. Scope of Bid

The Procuring Entity, ***Bureau of Soils and Water Management*** wishes to receive Bids for the ***MAINTENANCE OF SUBMERGED MEMBRANE BIO-REACTOR FOR CY 2023- IB NO: BSWM-2023-01-019.***

The Procurement Project (referred to herein as "Project") is composed of ***1 Lot,*** the details of which are described in Section VII (Technical Specifications).

2. Funding Information

2.1. The GOP through the source of funding as indicated below for ***FY 2023*** in the amount of Two Million Five Hundred Thousand Pesos (Php 2,500,000.00).

General Appropriation Act for CY 2023

3. Bidding Requirements

The Bidding for the Project shall be governed by all the provisions of RA No. 9184 and its 2016 revised IRR, including its Generic Procurement Manuals and associated policies, rules and regulations as the primary source thereof, while the herein clauses shall serve as the secondary source thereof.

Any amendments made to the IRR and other GPPB issuances shall be applicable only to the ongoing posting, advertisement, or **IB** by the BAC through the issuance of a supplemental or bid bulletin.

The Bidder, by the act of submitting its Bid, shall be deemed to have verified and accepted the general requirements of this Project, including other factors that may affect the cost, duration and execution or implementation of the contract, project, or work and examine all instructions, forms, terms, and project requirements in the Bidding Documents.

4. Corrupt, Fraudulent, Collusive, and Coercive Practices

The Procuring Entity, as well as the Bidders and Suppliers, shall observe the highest standard of ethics during the procurement and execution of the contract. They or through an agent shall not engage in corrupt, fraudulent, collusive, coercive, and obstructive practices defined under Annex "I" of the 2016 revised IRR of RA No. 9184 or other integrity violations in competing for the Project.

5. Eligible Bidders

5.1. Only Bids of Bidders found to be legally, technically, and financially capable will be evaluated.

5.2. Foreign ownership limited to those allowed under the rules may participate in this Project.

5.3. Pursuant to Section 23.4.1.3 of the 2016 revised IRR of RA No.9184, the Bidder shall have an SLCC that is at least one (1) contract similar to the Project the value of which, adjusted to current prices using the PSA's CPI, must be at least equivalent to:

a. For the procurement of Non-expendable Supplies and Services: The Bidder must have completed a single contract that is similar to this Project,equivalent to at least fifty percent (50%) of the ABC .

~~b. For the procurement of Expendable Supplies: The Bidder must have completed a single contract that is similar to this Project, equivalent to at least twenty-five percent (25%) of the ABC~~

~~c. For procurement where the Procuring Entity has determined, after the conduct of market research, that imposition of either (a) or (b) will likely result to failure of bidding or monopoly that will defeat the purpose of public bidding: the Bidder should comply with the following requirements: [Select either failure or monopoly of bidding based on market research conducted]~~

~~i. Completed at least two (2) similar contracts, the aggregate amount of which should be equivalent to at least fifty percent (50%) of the ABC for this Project; and~~

~~ii. The largest of these similar contracts must be equivalent to at least half of the percentage of the ABC as required above.~~

5.4. The Bidders shall comply with the eligibility criteria under Section 23.4.1 of the 2016 IRR of RA No. 9184.

6. Origin of Goods

There is no restriction on the origin of goods other than those prohibited by a decision of the UN Security Council taken under Chapter VII of the Charter of the UN, subject to Domestic Preference requirements under **ITB** Clause 18.

7. Subcontracts

7.1. The Bidder may subcontract portions of the Project to the extent allowed by the Procuring Entity as stated herein, but in no case more than twenty percent (20%) of the Project.

The Procuring Entity has prescribed that:

Subcontracting is not allowed.

7.2. ~~*[If Procuring Entity has determined that subcontracting is allowed during the bidding, state:]*~~The Bidder must submit together with its Bid the documentary requirements of the subcontractor(s) complying with the eligibility criteria stated in **ITB** Clause 5 in accordance with Section 23.4 of the 2016 revised IRR of RA No. 9184 pursuant to Section 23.1 thereof.

7.3. ~~*[If subcontracting is allowed during the contract implementation stage, state:]*~~ The Supplier may identify its subcontractor during the contract implementation stage. Subcontractors identified during the bidding may be changed during the implementation of this Contract. Subcontractors must submit the documentary requirements under Section 23.1 of the 2016 revised IRR of RA No. 9184 and comply with the eligibility criteria specified in **ITB** Clause 5 to the implementing or end-user unit.

7.4. Subcontracting of any portion of the Project does not relieve the Supplier of any liability or obligation under the Contract. The Supplier will be responsible for the acts, defaults, and negligence of any subcontractor, its agents, servants, or workmen as fully as if these were the Supplier's own acts, defaults, or negligence, or those of its agents, servants, or workmen.

8. Pre-Bid Conference

The Procuring Entity will hold a pre-bid conference for this Project on the specified date and time and either at its physical address and through videoconferencing/webcasting as indicated in paragraph 6 of the **IB.**

9. Clarification and Amendment of Bidding Documents

Prospective bidders may request for clarification on and/or interpretation of any part of the Bidding Documents. Such requests must be in writing and received by the Procuring Entity, either at its given address or through electronic mail indicated in the IB, at least ten (10) calendar days before the deadline set for the submission and receiptof Bids.

10. Documents comprising the Bid: Eligibility and Technical Components

10.1. The first envelope shall contain the eligibility and technical documents of the Bid as specified in **Section VIII (Checklist of Technical and Financial Documents)**.

10.2. The Bidder's SLCC as indicated in **ITB** Clause 5.3 should have been completed within ***two consecutive years*** prior to the deadline for the submission and receipt of bids.

10.3. If the eligibility requirements or statements, the bids, and all other documents for submission to the BAC are in foreign language other than English, it must be accompanied by a translation in English, which shall be authenticated by the appropriate Philippine foreign service establishment, post, or the equivalent office having jurisdiction over the foreign bidder's affairs in the Philippines. Similar to the required authentication above, for Contracting Parties to the

Apostille Convention, only the translated documents shall be authenticated through an apostille pursuant to GPPB Resolution No. 13-2019 dated 23 May 2019. The English translation shall govern, for purposes of interpretation of the bid.

11. Documents comprising the Bid: Financial Component

11.1. The second bid envelope shall contain the financial documents for the Bid as specified in **Section VIII (Checklist of Technical and Financial Documents)**.

11.2. If the Bidder claims preference as a Domestic Bidder or Domestic Entity, a certification issued by DTI shall be provided by the Bidder in accordance with Section 43.1.3 of the 2016 revised IRR of RA No. 9184.

11.3. Any bid exceeding the ABC indicated in paragraph 1 of the **IB** shall not be accepted.

11.4. For Foreign-funded Procurement, a ceiling may be applied to bid prices provided the conditions are met under Section 31.2 of the 2016 revised IRR of RA No. 9184.

12. Bid Prices

12.1. Prices indicated on the Price Schedule shall be entered separately in the following manner:

a. For Goods offered from within the Procuring Entity's country:

i. The price of the Goods quoted EXW (ex-works, ex-factory, ex-warehouse, ex-showroom, or off-the-shelf, as applicable);

ii. The cost of all customs duties and sales and other taxes already paid or payable;

iii. The cost of transportation, insurance, and other costs incidental to delivery of the Goods to their final destination; and

iv. The price of other (incidental) services, if any, listed in e.

b. For Goods offered from abroad:

i. Unless otherwise stated in the **BDS**, the price of the Goods shall be quoted delivered duty paid (DDP) with the place of destination in the Philippines as specified in the **BDS**. In quoting the price, the Bidder shall be free to use transportation through carriers registered in any eligible country. Similarly, the Bidder may obtain insurance services from any eligible source country.

ii. The price of other (incidental) services, if any, as listed in **Section VII (Technical Specifications).**

13. Bid and Payment Currencies

13.1. For Goods that the Bidder will supply from outside the Philippines, the bid prices may be quoted in the local currency or tradeable currency accepted by the BSP at the discretion of the Bidder. However, for purposes of bid evaluation, Bids denominated in foreign currencies, shall be converted to Philippine currency based on the exchange rate as published in the BSP reference rate bulletin on the day of the bid opening.

13.2. Payment of the contract price shall be made in:

Philippine Pesos.

14. Bid Security

14.1. The Bidder shall submit a Bid Securing Declaration[2] or any form of Bid Security in the amount indicated in the **BDS**, which shall be not less than the percentage of the ABC in accordance with the schedule in the **BDS**.

14.2. The Bid and bid security shall be valid until ***120 Calendar Days from Opening of Bids.*** Any Bid not accompanied by an acceptable bid security shall be rejected by the Procuring Entity as non-responsive.

15. Sealing and Marking of Bids

Each Bidder shall submit one copy of the first and second components of its Bid.

The Procuring Entity may request additional hard copies and/or electronic copies of the Bid. However, failure of the Bidders to comply with the said request shall not be a ground for disqualification.

If the Procuring Entity allows the submission of bids through online submission or any other electronic means, the Bidder shall submit an electronic copy of its Bid, which must be digitally signed. An electronic copy that cannot be opened or is corrupted shall be considered non-responsive and, thus, automatically disqualified.

16. Deadline for Submission of Bids

16.1. The Bidders shall submit on the specified date and time and either at its physical address or through online submission as indicated in paragraph 7 of the **IB.**

17. Opening and Preliminary Examination of Bids

17.1. The BAC shall open the Bids in public at the time, on the date, and at the place specified in paragraph 9 of the **IB**. The Bidders' representatives who are present shall sign a register evidencing their attendance. In case videoconferencing,

[2] In the case of Framework Agreement, the undertaking shall refer to entering into contract with the Procuring Entity and furnishing of the performance security or the performance securing declaration within ten (10) calendar days from receipt of Notice to Execute Framework Agreement.

webcasting or other similar technologies will be used, attendance of participants shall likewise be recorded by the BAC Secretariat.

In case the Bids cannot be opened as scheduled due to justifiable reasons, the rescheduling requirements under Section 29 of the 2016 revised IRR of RA No. 9184 shall prevail.

17.2. The preliminary examination of bids shall be governed by Section 30 of the 2016 revised IRR of RA No. 9184.

18. Domestic Preference

18.1. The Procuring Entity will grant a margin of preference for the purpose of comparison of Bids in accordance with Section 43.1.2 of the 2016 revised IRR of RA No. 9184.

19. Detailed Evaluation and Comparison of Bids

19.1. The Procuring BAC shall immediately conduct a detailed evaluation of all Bids rated "*passed*," using non-discretionary pass/fail criteria. The BAC shall consider the conditions in the evaluation of Bids under Section 32.2 of the 2016 revised IRR of RA No. 9184.

19.2. If the Project allows partial bids, bidders may submit a proposal on any of the lots or items, and evaluation will be undertaken on a per lot or item basis, as the case maybe. In this case, the Bid Security as required by **ITB** Clause 15 shallbe submitted for each lot or item separately.

19.3. The descriptions of the lots or items shall be indicated in **Section VII (Technical Specifications)**, although the ABCs of these lots or items are indicated in the **BDS** for purposes of the NFCC computation pursuant to Section 23.4.2.6 of the 2016 revised IRR of RA No. 9184. The NFCC must be sufficient for the total of the ABCs for all the lots or items participated in by the prospective Bidder.

19.4. The Project shall be awarded as follows:

1 project that shall be awarded as one contract.

19.5. Except for bidders submitting a committed Line of Credit from a Universal or Commercial Bank in lieu of its NFCC computation, all Bids must include the NFCC computation pursuant to Section 23.4.1.4 of the 2016 revised IRR of RA No. 9184, which must be sufficient for the total of the ABCs for all the lots or items participated in by the prospective Bidder. For bidders submitting the committed Line of Credit, it must be at least equal to ten percent (10%) of the ABCs for all the lots or items participated in by the prospective Bidder.

20. Post-Qualification

20.1. 20.2. Within a non-extendible period of five (5) calendar days from receipt bythe Bidder of the notice from the BAC that it submitted the Lowest Calculated Bid, the Bidder shall submit its latest income and business tax returns filed andpaid through the BIR Electronic Filing and Payment System (eFPS) and other appropriate licenses and permits required by law and stated in the **BDS**.

21. Signing of the Contract

21.1. The documents required in Section 37.2 of the 2016 revised IRR of RA No. 9184 shall form part of the Contract. Additional Contract documents are indicated in the **BDS**.

Section III. Bid Data Sheet

Notes on the Bid Data Sheet

The Bid Data Sheet (BDS) consists of provisions that supplement, amend, or specify in detail, information, or requirements included in the ITB found in Section II, which are specific to each procurement.

This Section is intended to assist the Procuring Entity in providing the specific information in relation to corresponding clauses in the ITB and has to be prepared for each specific procurement.

The Procuring Entity should specify in the BDS information and requirements specific to the circumstances of the Procuring Entity, the processing of the procurement, and the bid evaluation criteria that will apply to the Bids. In preparing the BDS, the following aspects should be checked:

a. Information that specifies and complements provisions of the ITB must be incorporated.

b. Amendments and/or supplements, if any, to provisions of the ITB as necessitated by the circumstances of the specific procurement, must also be incorporated.

Bid Data Sheet

ITB Clause	
5.3	For this purpose, contracts similar to the Project shall be: ***a. Contract on Maintenance of Submerged Membrane Bio-reactor (SMBR) or Wastewater Treatment System and/or its equivalent.*** ***b.*** completed within ***<u>two consecutive years</u>*** prior to the deadline for the submission and receipt of bids.
7.1	***SUB CONTRACTING- NOT APPLICABLE***
12	The price of the Goods shall be quoted DDP *[state place of destination]* or the applicable International Commercial Terms (INCOTERMS) for this Project.
14.1	The bid security shall be in the form of a Bid Securing Declaration, or any of the following forms and amounts: a. The amount of ***not less than two percent (2%) of ABC***, if bid security isin cash, cashier's/manager's check, bank draft/guarantee or irrevocable letter of credit; or b. The amount of ***not less than five percent (5%) of ABC*** if bid security isin Surety Bond. **NOTE: Bidders SHALL use ATTACHED template of Bid Securing Declaration.** **Other forms of Bid Securing Declaration will NOT BE ACCEPTED and SHALL BE RATED "FAILED".**
19.3	*<u>MAINTENANCE OF SUBMERGED MEMBRANE BIO-REACTOR FOR CY 2023</u>* ***Two Million Five Hundred Thousand Pesos (Php 2,500,000.00)***
20.2	***[List here any licenses and permits relevant to the Project and the corresponding law requiring it.]***
21.2	***[List here any additional contract documents relevant to the Project that may be required by existing laws and/or the Procuring Entity.]***

Section IV. General Conditions of Contract

Notes on the General Conditions of Contract

The General Conditions of Contract (GCC) in this Section, read in conjunction with the Special Conditions of Contract in Section V and other documents listed therein, should be a complete document expressing all the rights and obligations of the parties.

Matters governing performance of the Supplier, payments under the contract, or matters affecting the risks, rights, and obligations of the parties under the contract are included in the GCC and Special Conditions of Contract.

Any complementary information, which may be needed, shall be introduced only through the Special Conditions of Contract.

1. Scope of Contract

This Contract shall include all such items, although not specifically mentioned, that can be reasonably inferred as being required for its completion as if such items were expressly mentioned herein. All the provisions of RA No. 9184 and its 2016 revised IRR, including the Generic Procurement Manual, and associated issuances, constitute the primary source for the terms and conditions of the Contract, and thus, applicable in contract implementation. Herein clauses shall serve as the secondary source for the terms and conditions of the Contract.

This is without prejudice to Sections 74.1 and 74.2 of the 2016 revised IRR of RA No. 9184 allowing the GPPB to amend the IRR, which shall be applied to all procurement activities, the advertisement, posting, or invitation of which were issued after the effectivity of the said amendment.

Additional requirements for the completion of this Contract shall be provided in the **Special Conditions of Contract** (**SCC).**

2. Advance Payment and Terms of Payment

2.1. Advance payment of the contract amount is provided under Annex "D" of the revised 2016 IRR of RA No. 9184.

2.2. The Procuring Entity is allowed to determine the terms of payment on the partial or staggered delivery of the Goods procured, provided such partial payment shall correspond to the value of the goods delivered and accepted in accordance with prevailing accounting and auditing rules and regulations. The terms of payment are indicated in the **SCC**.

3. Performance Security

Within ten (10) calendar days from receipt of the Notice of Award by the Bidder from the Procuring Entity but in no case later than prior to the signing of the Contract by both parties, the successful Bidder shall furnish the performance security in any of theforms prescribed in Section 39 of the 2016 revised IRR of RA No. 9184.

4. Inspection and Tests

The Procuring Entity or its representative shall have the right to inspect and/or to test the Goods to confirm their conformity to the Project specifications at no extra cost to the Procuring Entity in accordance with the Generic Procurement Manual. In addition to tests in the **SCC**, **Section IV (Technical Specifications)** shall specify what inspections and/or tests the Procuring Entity requires, and where they are to be conducted. The Procuring Entity shall notify the Supplier in writing, in a timely manner, of the identity of any representatives retained for these purposes.

All reasonable facilities and assistance for the inspection and testing of Goods, including access to drawings and production data, shall be provided by the Supplier to the authorized inspectors at no charge to the Procuring Entity.

5. Warranty

5.1 In order to assure that manufacturing defects shall be corrected by the Supplier, a warranty shall be required from the Supplier as provided under Section 62.1 of the 2016 revised IRR of RA No. 9184.

5.2 The Procuring Entity shall promptly notify the Supplier in writing of any claims arising under this warranty. Upon receipt of such notice, the Supplier shall, repair or replace the defective Goods or parts thereof without cost to the Procuring Entity, pursuant to the Generic Procurement Manual.

6. Liability of the Supplier

The Supplier's liability under this Contract shall be as provided by the laws of the Republic of the Philippines.

If the Supplier is a joint venture, all partners to the joint venture shall be jointly and severally liable to the Procuring Entity.

Section V. Special Conditions of Contract

Notes on the Special Conditions of Contract

Similar to the BDS, the clauses in this Section are intended to assist the Procuring Entity in providing contract-specific information in relation to corresponding clauses in the GCC found in Section IV.

The Special Conditions of Contract (SCC) complement the GCC, specifying contractual requirements linked to the special circumstances of the Procuring Entity, the Procuring Entity's country, the sector, and the Goods purchased. In preparing this Section, the following aspects should be checked:

a. Information that complements provisions of the GCC must be incorporated.

b. Amendments and/or supplements to provisions of the GCC as necessitated by the circumstances of the specific purchase, must also be incorporated.

However, no special condition which defeats or negates the general intent and purpose of the provisions of the GCC should be incorporated herein.

Special Conditions of Contract

GCC Clause	
1	*[List here any additional requirements for the completion of this Contract. The following requirements and the corresponding provisions may be deleted, amended, or retained depending on its applicability to this Contract:]* **Delivery and Documents –** For purposes of the Contract, "EXW," "FOB," "FCA," "CIF," "CIP," "DDP" and other trade terms used to describe the obligations of the parties shall have the meanings assigned to them by the current edition of INCOTERMS published by the International Chamber of Commerce, Paris. The Delivery terms of this Contract shall be as follows: *[For Goods supplied from abroad, state:]* "The delivery terms applicable to the Contract are DDP delivered [*indicate place of destination*]. In accordance with INCOTERMS." *[For Goods supplied from within the Philippines, state:*] "The delivery terms applicable to this Contract are delivered *[indicate place of destination]*. Risk and title will pass from the Supplier to the Procuring Entity upon receipt and final acceptance of the Goods at their final destination." Delivery of the Goods shall be made by the Supplier in accordance with the terms specified in Section VI (Schedule of Requirements). For purposes of this Clause the Procuring Entity's Representative at the Project Site is ***End-User Representative, Authorized Property Management Unit Personnel and Inspection Committee Member.*** **Incidental Services –** The Supplier is required to provide all of the following services, including additional services, if any, specified in Section VI. Schedule of Requirements: *Select appropriate requirements and delete the rest.* a. performance or supervision of on-site assembly and/or start-up of the supplied Goods; b. furnishing of tools required for assembly and/or maintenance of the supplied Goods; c. furnishing of a detailed operations and maintenance manual for each appropriate unit of the supplied Goods;

	d. performance or supervision or maintenance and/or repair of the supplied Goods, for a period of time agreed by the parties, providedthat this service shall not relieve the Supplier of any warranty obligations under this Contract; and
	e. training of the Procuring Entity's personnel, at the Supplier's plant and/or on-site, in assembly, start-up, operation, maintenance, and/or repair of the supplied Goods. f. *[Specify additional incidental service requirements, as needed.]* The Contract price for the Goods shall include the prices charged by the Supplier for incidental services and shall not exceed the prevailing rates charged to other parties by the Supplier for similar services. **Spare Parts –** The Supplier is required to provide all of the following materials, notifications, and information pertaining to spare parts manufactured or distributed by the Supplier: *Select appropriate requirements and delete the rest.* a. such spare parts as the Procuring Entity may elect to purchase from the Supplier, provided that this election shall not relieve the Supplier of any warranty obligations under this Contract; and b. in the event of termination of production of the spare parts: i. advance notification to the Procuring Entity of the pending termination, in sufficient time to permit the Procuring Entity to procure needed requirements; and ii. following such termination, furnishing at no cost to the Procuring Entity, the blueprints, drawings, and specifications of the spare parts, if requested. The spare parts and other components required are listed in **Section VI (Schedule of Requirements)** and the cost thereof are included in the contract price. The Supplier shall carry sufficient inventories to assure ex-stock supply of consumable spare parts or components for the Goods for a period of ***One Year***. Spare parts or components shall be supplied as promptly as possible, but in any case, within ***not more than Seven Calendar Days*** of placing the order.

	Packaging – The Supplier shall provide such packaging of the Goods as is required to prevent their damage or deterioration during transit to their final destination, as indicated in this Contract. The packaging shall be sufficient to withstand, without limitation, rough handling during transit and exposure to extreme temperatures, salt and precipitation during transit, and open storage. Packaging case size and weights shall take into consideration, where appropriate, the remoteness of the Goods' final destination and the absence of heavy handling facilities at all points in transit. The packaging, marking, and documentation within and outside the packages shall comply strictly with such special requirements as shall be expressly provided for in the Contract, including additional requirements, if any, specified below, and in any subsequent instructions ordered by the Procuring Entity. The outer packaging must be clearly marked on at least four (4) sides as follows: Name of the Procuring Entity Name of the Supplier Contract Description Final Destination Gross weight Any special lifting instructions Any special handling instructions Any relevant HAZCHEM classifications
	A packaging list identifying the contents and quantities of the package is to be placed on an accessible point of the outer packaging if practical. If not practical the packaging list is to be placed inside the outer packaging but outside the secondary packaging. **Transportation –** Where the Supplier is required under Contract to deliver the Goods CIF, CIP, or DDP, transport of the Goods to the port of destination or such other named place of destination in the Philippines, as shall be specified in this Contract, shall be arranged and paid for by the Supplier, and the cost thereof shall be included in the Contract Price. Where the Supplier is required under this Contract to transport the Goods to a specified place of destination within the Philippines, defined as the Project Site, transport to such place of destination in the Philippines, including insurance and storage, as shall be specified in this Contract, shall be arranged by the Supplier, and related costs shall be included in the contract price.

	Where the Supplier is required under Contract to deliver the Goods CIF, CIP or DDP, goods are to be transported on carriers of Philippine registry. In the event that no carrier of Philippine registry is available, goods may be shipped by a carrier which is not of Philippine registry provided that the Supplier obtains and presents to the Procuring Entity certification to this effect from the nearest Philippine consulate to the port of dispatch. In the event that carriers of Philippine registry are available but their schedule delays the Supplier in its performance of this Contract the period from when the Goods were first ready for shipment and the actual date of shipment the period of delay will be considered force majeure. The Procuring Entity accepts no liability for the damage of Goods during transit other than those prescribed by INCOTERMS for DDP deliveries. In the case of Goods supplied from within the Philippines or supplied by domestic Supplier's risk and title will not be deemed to have passed to the Procuring Entity until their receipt and final acceptance at the final destination. **Intellectual Property Rights –** The Supplier shall indemnify the Procuring Entity against all third-party claims of infringement of patent, trademark, or industrial design rights arising from use of the Goods or any part thereof.
2.2	**Payment: Progress Billing** **Upon submission of required documents per the Terms of Reference (TOR), if applicable:** ✓ Water sampling and analysis result ✓ Written periodic report ✓ other documentary requirements as per accounting and auditing rules
4	The inspections and tests that will be conducted are: ***Inspection per conformity and compliance to technical specifications.***

Section VI. Schedule of Requirements

The delivery schedule expressed as weeks/months stipulates hereafter a delivery date which is the date of delivery to the project site.

Item Number	Description	Qty	Delivered, Weeks/Months
1	PREVENTIVE MAINTENANCE OF THE SUBMERGE MEMBRANE BIOREACTOR (SMBR) FOR CY 2023	1	March- November 2023

Section VII. Technical Specifications

Notes for Preparing the Technical Specifications

A set of precise and clear specifications is a prerequisite for Bidders to respond realistically and competitively to the requirements of the Procuring Entity without qualifying their Bids. In the context of Competitive Bidding, the specifications (*e.g.* production/delivery schedule, manpower requirements, and after-sales service/parts, descriptions of the lots or items) must be prepared to permit the widest possible competition and, at the same time, present a clear statement of the required standards of workmanship, materials, and performance of the goods and services to be procured. Only if this is done will the objectives of transparency, equity, efficiency, fairness , and economy in procurement be realized, responsiveness of bids be ensured, and the subsequent task of bid evaluation and post-qualification facilitated. The specifications should require that all items, materials and accessories to be included or incorporated in the goods be new, unused, and of the most recent or current models, and that they include or incorporate all recent improvements in design and materials unless otherwise provided in the Contract.

Samples of specifications from previous similar procurements are useful in this respect. The use of metric units is encouraged. Depending on the complexity of the goods and the repetitiveness of the type of procurement, it may be advantageous to standardize the General Technical Specifications and incorporate them in a separate subsection. The General Technical Specifications should cover all classes of workmanship, materials, and equipment commonly involved in manufacturing similar goods. Deletions or addenda should then adapt the General Technical Specifications to the particular procurement.

Care must be taken in drafting specifications to ensure that they are not restrictive. In the specification of standards for equipment, materials, and workmanship, recognized Philippine and international standards should be used as much as possible. Where other particular standards are used, whether national standards or other standards, the specifications should state that equipment, materials, and workmanship that meet other authoritative standards, and which ensure at least a substantially equal quality than the standards mentioned, will also be acceptable. The following clause may be inserted in the Special Conditions of Contract or the Technical Specifications.

Sample Clause: Equivalency of Standards and Codes

Wherever reference is made in the Technical Specifications to specific standards and codes to be met by the goods and materials to be furnished or tested, the provisions of the latest edition or revision of the relevant standards and codes shall apply, unless otherwise expressly stated in the Contract. Where such standards and codes are national or relate to a particular country or region, other authoritative standards that ensure substantial equivalence to the standards and codes specified will be acceptable.

Reference to brand name and catalogue number should be avoided as far as possible; where unavoidable they should always be followed by the words "*or at least equivalent*." References to brand names cannot be used when the funding source is the GOP.

Where appropriate, drawings, including site plans as required, may be furnished by the Procuring Entity with the Bidding Documents. Similarly, the Supplier may be requested to provide drawings or samples either with its Bid or for prior review by the Procuring Entity during contract execution.

Bidders are also required, as part of the technical specifications, to complete their statement of compliance demonstrating how the items comply with the specification.

Technical Specifications

Item	Specification	Statement of Compliance
[Bidders must state here either "Comply" or "Not Comply" against each of the individual parameters of each Specification stating the corresponding performance parameter of the equipment offered. Statements of "Comply" or "Not Comply" must besupported by evidence in a Bidders Bid and cross-referenced to that evidence. Evidenceshall be in the form of manufacturer's un-amended sales literature, unconditional statements of specification and compliance issued by the manufacturer, samples, independent test data etc., as appropriate. A statement that is not supported by evidenceor is subsequently found to be contradicted by the evidence presented will render the Bidunder evaluation liable for rejection. A statement either in the Bidder's statement of compliance or the supporting evidence that is found to be false either during Bid evaluation, post-qualification or the execution of the Contract may be regarded as fraudulent and render the Bidder or supplier liable for prosecution subject to the applicable laws and issuances.]		

	Objective	
	Analyze gathered data from the operation of the facility and advise the BSWM on the existing concerns related to the operation of the MBR system	
	execute the specific maintenance requirement for each component of the MBR system	
	provide supervision, expert and skilled manpower for the implementation of the maintenance program;	
	provide cleaning materials, tools, equipment, consumables, including chemicals for the membrane filter cleaning and motor lubrication	
	advise the BSWM regarding the required procurement of spares and replacement parts	
	MAINTENANCE PROCEDURE	
	1. Interior and Exterior of the Facility a. The interior and exterior portions of the MBR Wastewater Treatment System shall be inspected. Rusty parts must be repainted and broken or damaged components shall be repaired or replaced immediately. b. The expected output of this maintenance is to ensure that the metal parts of the MBR system will last and not be damaged by corrosion. Furthermore, this is also to ensure that the whole MBR system will be working properly and as designed.	
	2. Equalization and Neutralization Tank 2.1 To maintain the Equalization and Neutralization Tank, these are the steps to be done: a. Open the manhole covers and check for accumulation of solids and other waste materials; b. Check the level of the wastewater; c. Check the condition of the float sensors. Test its functionality and interlocking function through the main control panel. Thoroughly clean the surface of the float switch; d. If there's uneven aeration, check the condition of the diffusers. Drain the tank by treating continuously and reducing the level of the tank until the diffusers are exposed. Declog and clean the diffusers by soaking it in	

	0.5% sodium hypochlorite (NaOCl) solution. Ensure that the diffusers are properly tightened after placing it back in the diffuser manifold. 2.2 The expected output of this maintenance is to ensure that the level sensors and diffusers of the Equalization and Neutralization Tank are working properly.	
	3. Aeration Tank 3.1 The Aeration Tank is where the biological degradation of wastewater is happening. Therefore, it is very critical that it is always working properly. The maintenance steps for the tank: a. Open the manhole cover and check the level of the wastewater; b. Check the condition of the float sensors. Test its functionality and interlocking function through the main control panel. Thoroughly clean the surface of the float switch; c. If there's uneven aeration, check the condition of the diffusers. Drain the tank by treating continuously and reducing the level of the tank until the diffusers are exposed. Declog and clean the diffusers by soaking it in 0.5% sodium hypochlorite (NaOCl) solution. Ensure that the diffusers are properly tightened after placing it back in the diffuser manifold. 3.2 The expected output of this maintenance is to ensure that the level sensors and diffusers of the Aeration Tank are working properly.	
	4. Pumps (6 units) 4.1 To ensure that the process of the MBR system is working properly, all pumps must be maintained to prevent downtime. The maintenance steps to be conducted: a. Check the oil level. Change oil if it's no longer transparent; b. Inspect the cable entry; c. Inspect for leakage especially when the pump has been in use for a long time; d. Inspect the housing of the motor; e. Unscrew the inspection plug of the housing of the motor; f. Inspect the plug if water is present due to condensation; g. Inspect for corrosion; h. Check the rubber gasket; i. Check for abnormal sounds during operation. Conduct vibration check. Also check the temperature of the motors. Align the pumps if the vibration is abnormal.	

	4.2 The expected output of this maintenance is to ensure that all pumps of the whole MBR system are working properly as designed.	
	5. Blowers (6 units) 5.1 Blowers are necessary to ensure that the biomass in the Aeration Tank are provided with sufficient oxygen to maintain aerobic condition. Aside from this, this is also critical in providing air scouring in the membrane tank to ensure that the solids will not accumulate on the surface of the membranes. Furthermore, these are also used in ensuring that the influent is properly equalized/mixed in the Equalization and Neutralization Tank and also to maintain aerobic condition in the WAS Tank. The maintenance steps for the blowers: a. Check the cable connections for deterioration; b. Check the pressure gauge. Adjust if necessary; c. Check the oil level; d. Change/replenish the oil if necessary; e. Check the intake filters; f. Clean the filters. Replace the filters annually or when necessary; g. Inspect for leakage especially when the blowers are in use for a long time; h. Inspect the housing of the motors; i. Unscrew the inspection plug of the housing of the motor; j. Inspect the plugs if water is present due to condensation; k. Inspect for corrosion; l. Check the rubber gaskets; m. Check for abnormal sounds. Conduct vibration check. Also check the temperature of the motors. Align the blowers if the vibration is abnormal. 5.2 The expected output of this maintenance is to ensure that all the blowers of the whole MBR system are working properly as designed.	
	6. pH Meter and Controller 6.1 The pH of the wastewater is critical in ensuring that the biomass in the Aeration Tank of the MBR system will not die. Very low or very high pH value of the wastewater can washout the biomass and create an upset in the MBR system. The maintenance and calibration procedure of the pH Meter and Controller: a. Calibrate the pH Meter using pH buffer solutions 4 and 7; b. Check for any defects or scaling on the surface of the sensor;	

	c. If there are any defects, replace/repair as per instruction manual; d. Check the cables and pH controller functions; e. Check the acid and alkali metering pumps for leaks and abnormal sounds. Conduct repairs if necessary. Precaution in handling the metering pumps must be observed since strong acid and alkali can burn skin and clothing. Wear the necessary Personal Protective Equipment (PPE). 6.2 The expected output of this maintenance is to ensure that the pH Meter and Controller is working properly and are reading the correct pH values.	
	7. Permeate Flow Meter 7.1 The Permeate Flow Meter is used in setting the right flux rate for the operation of the MBR system. This is critical to ensure that the flux rate being used is within the range set by the manufacturer to prevent premature membrane damage. The maintenance procedure for the Permeate Flow Meter: a. Evaluate if the flow meter is showing correct values; b. Calibrate the flow meter as needed; c. Check for any defects. 7.2 The expected output of this maintenance is to ensure that the Permeate Flow Meter is working properly and is reading the correct flow rate for flux rate calculations.	
	8. Wastewater Feed Flow Meter 8.1 The Wastewater Feed Flow Meter is used in setting the right flow rate to ensure that the correct Hydraulic Retention Time (HRT) is achieved in the Aeration Tank. This is critical to ensure proper biological degradation of the wastewater. The maintenance procedure for the Wastewater Feed Flow Meter: a. Evaluate if the flow meter is functioning properly; b. Isolate the flow meter by activating the by-pass line. Remove the flow meter and inspect for any internal damage; c. Check for any defects; d. Clean the internal of the flow meter by using liquid detergent. 8.2 The expected output of this maintenance is to ensure that the Wastewater Feed Flow Meter is working properly and is reading the correct flow rate for proper biological degradation.	
	9. Transmembrane Pressure Transmitter	

	9.1 The Transmembrane Pressure Transmitter indicates the level of fouling on the membrane surface. Using this Transmembrane Pressure Transmitter, the operator will know when it is already time to do onsite cleaning of the membranes. The maintenance procedure for this Transmembrane Pressure Transmitter is as follows: a. Evaluate the performance of the transmitter; b. Check the signal cables; c. Check for any defects. 9.2 The expected output of this maintenance is to ensure that the Transmembrane Pressure Transmitter is working properly and is reading the correct pressure to prolong the life of the membranes.	
	10. Basket Strainer 10.1 The Basket Strainer is used to remove particles more than 3 millimetres. This is to ensure that there will be no foreign objects that can enter the MBR system and ultimately damage the membranes. The maintenance procedure for this Basket Strainer is as follows: a. Check for accumulated solids or clogging in the basket strainer; b. Thoroughly clean and remove the clogging; 10.2 The expected output of this maintenance is to ensure that the Basket Strainer is working properly to prevent large objects from getting into the Membrane Tank.	
	11. Pipelines 11.1 The maintenance procedure of the pipelines is as follows: a. Check for deterioration; b. Check for tightness; c. Check for leakage; d. Check exposed portions of the pipes. Repaint if necessary. 11.2 The expected output of this maintenance is to ensure that the pipelines have no leaks and are not rusted so that it will last for many years.	
	MEMBRANE INSPECTION AND RECOVERY CLEANING Membrane inspection and recovery cleaning of the membranes are necessary for the efficient operation of the membranes. It is recommended to conduct this membrane inspection and recovery cleaning every year for a trouble-free operation. The procedure of this membrane cleaning is as follows:	

	a. Preparation of the Chemical Cleaning Solution o Organic fouling of the membrane pores can be cleaned by using a dilute solution of bleach (sodium hypochlorite, NaOCl). Stock chemical solution should be diluted to 0.5~0.6%, and make approximately three (3) liters of the dilute cleaning solution per membrane cassette. However, if the sludge concentration is lower than 10,000 mg/L, dilute the chemical to 0.25%. o Inorganic fouling (Iron, Aluminum, and/or others) of the membrane pores can be cleaned by Oxalic Acid. Prepare about three (3) liters of 0.5 to 1.0% Oxalic Acid solution per membrane cassette. If the membrane cassettes are polluted with calcium (Ca), NEVER use Oxalic Acid. Hydrochloric Acid (less than 2%) or Citric Acid (less than 0.5~1.0%) should be utilized. *Note:* *Type of chemical, concentration, contact time, and cleaning efficiency depends on wastewater characteristics and operating conditions in each plant.*	
	b. Suspension of Filtration and Aeration o Stop filtration and aeration of SMU to be chemically cleaned. Close the permeate valve(s).	
	c. Injection of the Chemical Solution o Make sure that the water level in Membrane Tank is 300 mm or more above the top of Membrane Case, or the permeate tubes are completely submerged. o Inject the prepared chemical solution into every Membrane Cartridge via the injection port (injection time takes approximately 5 to 10 minutes.) Pressurized chemical injection by pump should be avoided and injection by gravity (10 kPa or less and instantaneously 20 kPa or less) is recommended. In order to prevent pressure increase within Membrane Cartridges, the chemical should be injected by, for instance, adjusting the rate with valve. Moreover, the chemical should be injected intermittently in order to release the trapped air from Membrane Cartridges. o When cleaning a calcium carbonate fouling (caused by treating Ca in the wastewater) by acid, a careful attention should be taken since the chemical reaction would generate carbonic acid gas and this may blow out from the injection port.	
	d. In-Situ Chemical Cleaning o After injection of the chemical solution, leave the Membrane Cartridges for one (1) to two (2) hours. As a guide, it should take approximately two (2) hours for cleaning organic substances and one (1) hour for cleaning inorganic substances.	

e. Operation Re-Start

- Approximately fifteen (15) minutes after restarting filtration, return the permeate to the head of the plant (Equalization and Neutralization Tank).

- When cleaning with Sodium Hypochlorite, make sure the residual chlorine concentration in the permeate becomes low enough (10 mg/L or less) before resuming normal operation.

- After cleaning with acid, neutralize the Membrane Tank and wastewater. Confirm that pH in all the tanks are within proper range before restarting the operation.

Notes:

[1]Because the chemical solution flows back slowly from the permeate side to activated sludge side by low pressure, it is more effective to clean the membrane before it is fully fouled, or during the period when increase in filtration pressure is still small since the operation has just started.

[2]Never lift the Membranes without conducting filtration for at least thirty (30) minutes after the chemical cleaning. If Membranes are removed as soon as chemical cleaning has finished, accidents due to trickle of the chemical and/or damage in Membrane Cartridges may occur.

CAUTION:
Before using chemicals, carefully read the Material Safety Data Sheet (MSDS), and wear protective equipment such as masks, goggles, gloves, etc. Misuse of any chemical may result in physical accident.

The expected output of this maintenance is to ensure that the membranes are maintained properly so that it will last for many years since it is the most expensive component of the MBR system.

BIOAUGMENTATION (SEEDING OF BACTERIA & ENZYME)

To maintain a healthy biomass in the Aeration Tank, bioaugmentation since the wastewater coming from the building of BSWM contains wastes from its laboratory. Some wastes from laboratories might be toxic to the activated sludge, hence, it is better to seed new bacteria and enzyme in the bioreactor to prevent biological upsets.

PARAMETERS TO BE ANALYZED

1. The following parameters shall be analyzed for the influent and effluent of the MBR system:

   a. Biochemical Oxygen Demand (BOD)
   b. Chemical Oxygen Demand (COD)
   c. Total Suspended Solids (TSS)
   d. pH (Range)
   e. Oil & Grease
   f. Color
   g. Ammonia
   h. Nitrate as NO_3-N
   i. Phosphate

	j. Chloride *k. Dissolved Oxygen (Minimum) – samples shall be taken from 9:00AM to 4:00PM* *l. Fecal Coliform* *m. Temperature – the natural background temperature as determined by Environment Management Bureau (EMB) shall prevail if the temperature is lower or higher than the WQG; provided that the maximum increase is only up to 10 percent and that it will not cause any risk to human health and the environment.*	
	TECHNICAL STAFF REQUIREMENT	
	1. Supervisor- One (1) pax • Licensed chemical or environmental engineering or any related technical course; • Has a minimum of five (5) years' experience in the installation, operation and maintenance of a MBR System; and • Has a minimum of ten (10) years of professional experience in wastewater treatment	
	2. Membrane Specialist- One (1) pax • College degree in chemical or environmental engineering or any related technical course; • Has hands-on experience of at least three (3) years in the operation and maintenance of a MBR System; and • Has a minimum of five (5) years of professional experience in wastewater treatment	
	3. Process Equipment Specialist- One (1) pax • College degree in chemical or mechanical engineering or any related technical course; • Has a minimum of three (3) years' experience in the installation and maintenance of the process equipment installed in the MBR Wastewater Treatment System of BSWM; and • Has a minimum of five (5) years of professional experience in wastewater treatment	
	4. MBR Technicians- Two (2) pax • Technical course graduate; • Has a minimum of three (3) years' experience in the operation and maintenance of MBR systems; and • Has a minimum of five (5) years of professional experience in wastewater treatment	
	5. Safety Officer- (1) pax • Graduate of any four (4) or five (5) year course; • Has completed either the Basic Occupational Safety and Health (BOSH) or Construction Occupational Safety and Health (COSH) training; and • Has a minimum of three (3) years' experience in the operation and maintenance of MBR systems	
	NOTE: <u>Please submit all evidence to support the qualifications of the Technical Personnel</u>	
	ESTIMATED COST FOR THE FISCAL YEAR 2023	
	The total estimated cost for the Maintenance Program for	

	2023 is **Two Million Five Hundred Thousand Pesos (Php 2,500,000.00)**. This cost is inclusive of the following supply and works: 1. Perform all the works mentioned above. 2. Supply all the necessary chemicals, consumables, manpower (technical staff and laborer) for the performance of the maintenance activities. 3. Conduct at least four water sampling and analysis of the influent and effluent of the MBR system (1st sampling – before start of maintenance program, 2nd-4th sampling every 30 days within the contract period. Additional sampling might be needed until final result is compliant to wastewater standard.). 4. Submit result of analysis of the influent and effluent of the MBR system. 5. Submit written periodic report (30th and 60th day or after every sampling) and final detailed and full report (90th day or after completion of maintenance) with recommendations regarding the status of operation of the MBR system. 6. Training for the authorized BSWM personnel.	
	The supplier shall not be held responsible under the contract for items, components, or services delivery as stipulated below:	
	1. Supply of spare parts, tools, or materials for equipment correction/repair service; 2. Upgrade or improvements on the hardware; 3. Any mechanical or electrical breakdown involving components that has been added, substituted, or modified without prior notice to the supplier; 4. Any failure due to fire, lightning, explosion, storm, collision, vandalism, water damage, earthquake, flood, radiation, or contamination; and losses caused by intentional actions, negligence, intentional overloading, improper testing, or the imposition of abnormal conditions;	
	Certificate of Site Inspection (to be submitted on the Bid Proposal under Technical Envelope)	
	Compliance with Section VI Schedule of Requirement	

Terms of Reference
Maintenance of the Submerge Membrane Bioreactor (SMBR)

A. BACKGROUND

The Bureau of Soils and Water Management (BSWM) has acquired a Wastewater Treatment System using Membrane Bioreactor (MBR) technology to treat the wastewater being generated by its laboratory and its existing sewerage system. MBR system is one of the most advanced biological wastewater treatment systems in terms of the quality of treated water that it can produce. The treated water can be reused for toilet flushing, garden irrigation, firefighting water, etc.

The whole MBR system is composed of the Equalization and Neutralization Tank, Aeration Tank, Membrane Tank, Waste Activated Sludge (WAS) Tank, Effluent Tank, aeration and pumping equipments, pipelines, measuring instruments, membrane filter and protection interlock system. This state-of-the-art MBR system is expected to have a useful life of fifteen (15) years with a good maintenance program in place.

It is critical that a maintenance program is performed to the whole MBR system through an annual maintenance contract. The supplier shall be tasked to carry out the implementation of the maintenance program of the whole system, taking into consideration that intricate knowledge and skills are required to lengthen the useful life of the membrane filter, which is the most expensive component of the whole system. The supplier shall provide the skilled manpower, tools, consumables, and other resources necessary to carry out the maintenance program of the MBR system.

B. OBJECTIVE

The objective of the service contract is for the supplier to conduct site visitations to perform equipment checks and maintenance activities and to conduct water sampling and analysis of the influent and effluent of the MBR system of BSWM. This is to ensure that the MBR system is operating properly and breakdown of equipments are prevented.

C. SCOPE OF WORK

The maintenance program is focused on five (5) main areas:

1. To analyze gathered data from the operation of the facility and advise the BSWM on the existing concerns related to the operation of the MBR system;

2. To execute the specific maintenance requirement for each component of the MBR system;

3. To provide supervision, expert and skilled manpower for the implementation of the maintenance program;
4. To provide cleaning materials, tools, equipments, consumables, including chemicals for the membrane filter cleaning and motor lubrication; and

5. To advise the BSWM regarding the required procurement of spares and replacement parts.

D. MAINTENANCE PROCEDURE

12. Interior and Exterior of the Facility

1.1 The interior and exterior portions of the MBR Wastewater Treatment System shall be inspected. Rusty parts must be repainted and broken or damaged components shall be repaired or replaced immediately.

1.2 The expected output of this maintenance is to ensure that the metal parts of the MBR system will last and not be damaged by corrosion. Furthermore, this is also to ensure that the whole MBR system will be working properly and as designed.

13. Equalization and Neutralization Tank

2.3 To maintain the Equalization and Neutralization Tank, these are the steps to be done:

e. Open the manhole covers and check for accumulation of solids and other waste materials;
f. Check the level of the wastewater;
g. Check the condition of the float sensors. Test its functionality and interlocking function through the main control panel. Thoroughly clean the surface of the float switch;
h. If there's uneven aeration, check the condition of the diffusers. Drain the tank by treating continuously and reducing the level of the tank until the diffusers are exposed. Declog and clean the diffusers by soaking it in 0.5% sodium hypochlorite (NaOCl) solution. Ensure that the diffusers are properly tightened after placing it back in the diffuser manifold.

2.4 The expected output of this maintenance is to ensure that the level sensors and diffusers of the Equalization and Neutralization Tank are working properly.

14. Aeration Tank

3.3 The Aeration Tank is where the biological degradation of wastewater is happening. Therefore, it is very critical that it is always working properly. The maintenance steps for the tank:

d. Open the manhole cover and check the level of the wastewater;
e. Check the condition of the float sensors. Test its functionality and interlocking function through the main control panel. Thoroughly clean the surface of the float switch;
f. If there's uneven aeration, check the condition of the diffusers. Drain the tank by treating continuously and reducing the level of the tank until the diffusers are exposed. Declog and clean the diffusers by soaking it in 0.5% sodium hypochlorite (NaOCl) solution. Ensure that the diffusers are properly tightened after placing it back in the diffuser manifold.

3.4 The expected output of this maintenance is to ensure that the level sensors and diffusers of the Aeration Tank are working properly.

15. Pumps (6 units)

4.3 To ensure that the process of the MBR system is working properly, all pumps must be maintained to prevent downtime. The maintenance steps to be conducted:

j. Check the oil level. Change oil if it's no longer transparent;
k. Inspect the cable entry;
l. Inspect for leakage especially when the pump has been in use for a long time;
m. Inspect the housing of the motor;
n. Unscrew the inspection plug of the housing of the motor;
o. Inspect the plug if water is present due to condensation;
p. Inspect for corrosion;
q. Check the rubber gasket;
r. Check for abnormal sounds during operation. Conduct vibration check. Also check the temperature of the motors. Align the pumps if the vibration is abnormal.

4.4 The expected output of this maintenance is to ensure that all pumps of the whole MBR system are working properly as designed.

16. Blowers (6 units)

5.3 Blowers are necessary to ensure that the biomass in the Aeration Tank are provided with sufficient oxygen to maintain aerobic condition. Aside from this, this is also critical in providing air scouring in the membrane tank to ensure that the solids will not accumulate on the surface of the membranes. Furthermore, these are also used in ensuring that the influent is properly equalized/mixed in the Equalization and Neutralization Tank and also to maintain aerobic condition in the WAS Tank. The maintenance steps for the blowers:

n. Check the cable connections for deterioration;
o. Check the pressure gauge. Adjust if necessary;
p. Check the oil level;
q. Change/replenish the oil if necessary;
r. Check the intake filters;
s. Clean the filters. Replace the filters annually or when necessary;
t. Inspect for leakage especially when the blowers are in use for a long time;
u. Inspect the housing of the motors;
v. Unscrew the inspection plug of the housing of the motor;

w. Inspect the plugs if water is present due to condensation;
x. Inspect for corrosion;
y. Check the rubber gaskets;
z. Check for abnormal sounds. Conduct vibration check. Also check the temperature of the motors. Align the blowers if the vibration is abnormal.

5.4 The expected output of this maintenance is to ensure that all the blowers of the whole MBR system are working properly as designed.

17. pH Meter and Controller

6.3 The pH of the wastewater is critical in ensuring that the biomass in the Aeration Tank of the MBR system will not die. Very low or very high pH value of the wastewater can washout the biomass and create an upset in the MBR system. The maintenance and calibration procedure of the pH Meter and Controller:

f. Calibrate the pH Meter using pH buffer solutions 4 and 7;
g. Check for any defects or scaling on the surface of the sensor;
h. If there are any defects, replace/repair as per instruction manual;
i. Check the cables and pH controller functions;
j. Check the acid and alkali metering pumps for leaks and abnormal sounds. Conduct repairs if necessary. Precaution in handling the metering pumps must be observed since strong acid and alkali can burn skin and clothing. Wear the necessary Personal Protective Equipment (PPE).

6.4 The expected output of this maintenance is to ensure that the pH Meter and Controller is working properly and are reading the correct pH values.

18. Permeate Flow Meter

7.3 The Permeate Flow Meter is used in setting the right flux rate for the operation of the MBR system. This is critical to ensure that the flux rate being used is within the range set by the manufacturer to prevent premature membrane damage. The maintenance procedure for the Permeate Flow Meter:

d. Evaluate if the flow meter is showing correct values;
e. Calibrate the flow meter as needed;
f. Check for any defects.

7.4 The expected output of this maintenance is to ensure that the Permeate Flow Meter is working properly and is reading the correct flow rate for flux rate calculations.

19. Wastewater Feed Flow Meter

8.3 The Wastewater Feed Flow Meter is used in setting the right flow rate to ensure that the correct Hydraulic Retention Time (HRT) is achieved in the Aeration Tank. This is critical to ensure proper biological degradation of the wastewater. The maintenance procedure for the Wastewater Feed Flow Meter:

e. Evaluate if the flow meter is functioning properly;
f. Isolate the flow meter by activating the by-pass line. Remove the flow meter and inspect for any internal damage;
g. Check for any defects;
h. Clean the internal of the flow meter by using liquid detergent.

8.4 The expected output of this maintenance is to ensure that the Wastewater Feed Flow Meter is working properly and is reading the correct flow rate for proper biological degradation.

20. Transmembrane Pressure Transmitter

9.3 The Transmembrane Pressure Transmitter indicates the level of fouling on the membrane surface. Using this Transmembrane Pressure Transmitter, the operator will know when it is already time to do onsite cleaning of the membranes. The maintenance procedure for this Transmembrane Pressure Transmitter is as follows:

d. Evaluate the performance of the transmitter;
e. Check the signal cables;
f. Check for any defects.

9.4 The expected output of this maintenance is to ensure that the Transmembrane Pressure Transmitter is working properly and is reading the correct pressure to prolong the life of the membranes.

21. Basket Strainer

10.3 The Basket Strainer is used to remove particles more than 3 millimetres. This is to ensure that there will be no foreign objects that can enter the MBR system and ultimately damage the membranes. The maintenance procedure for this Basket Strainer is as follows:

c. Check for accumulated solids or clogging in the basket strainer;
d. Thoroughly clean and remove the clogging;

10.4 The expected output of this maintenance is to ensure that the Basket Strainer is working properly to prevent large objects from getting into the Membrane Tank.

22. Pipelines

11.3 The maintenance procedure of the pipelines is as follows:

e. Check for deterioration;
f. Check for tightness;
g. Check for leakage;
h. Check exposed portions of the pipes. Repaint if necessary.

11.4 The expected output of this maintenance is to ensure that the pipelines have no leaks and are not rusted so that it will last for many years.

E. MEMBRANE INSPECTION AND RECOVERY CLEANING

Membrane inspection and recovery cleaning of the membranes are necessary for the efficient operation of the membranes. It is recommended to conduct this membrane inspection and recovery cleaning every year for a trouble-free operation. The procedure of this membrane cleaning is as follows:

f. Preparation of the Chemical Cleaning Solution

- Organic fouling of the membrane pores can be cleaned by using a dilute solution of bleach (sodium hypochlorite, NaOCl). Stock chemical solution should be diluted to 0.5~0.6%, and make approximately three (3) liters of the dilute cleaning solution per membrane cassette. However, if the sludge concentration is lower than 10,000 mg/L, dilute the chemical to 0.25%.

- Inorganic fouling (Iron, Aluminum, and/or others) of the membrane pores can be cleaned by Oxalic Acid. Prepare about three (3) liters of 0.5 to 1.0% Oxalic Acid solution per membrane cassette. If the membrane cassettes are polluted with calcium (Ca), NEVER use Oxalic Acid. Hydrochloric Acid (less than 2%) or Citric Acid (less than 0.5~1.0%) should be utilized.

Note:
Type of chemical, concentration, contact time, and cleaning efficiency depends on wastewater characteristics and operating conditions in each plant.

g. Suspension of Filtration and Aeration

- Stop filtration and aeration of SMU to be chemically cleaned. Close the permeate valve(s).

h. Injection of the Chemical Solution

- Make sure that the water level in Membrane Tank is 300 mm or more above the top of Membrane Case, or the permeate tubes are completely submerged.

- Inject the prepared chemical solution into every Membrane Cartridge via the injection port (injection time takes approximately 5 to 10 minutes.) Pressurized chemical injection by pump should be avoided and injection by gravity (10 kPa or less and instantaneously 20 kPa or less) is recommended. In order to prevent pressure increase within Membrane Cartridges, the chemical should be injected by, for instance, adjusting the rate with valve. Moreover, the chemical should be injected intermittently in order to release the trapped air from Membrane Cartridges.

- When cleaning a calcium carbonate fouling (caused by treating Ca in the wastewater) by acid, a careful attention should be taken since the chemical reaction would generate carbonic acid gas and this may blow out from the injection port.

i. In-Situ Chemical Cleaning

- After injection of the chemical solution, leave the Membrane Cartridges for one (1) to two (2) hours. As a guide, it should take approximately two (2) hours for cleaning organic substances and one (1) hour for cleaning inorganic substances.

j. Operation Re-Start

- Approximately fifteen (15) minutes after restarting filtration, return the permeate to the head of the plant (Equalization and Neutralization Tank).

- When cleaning with Sodium Hypochlorite, make sure the residual chlorine concentration in the permeate becomes low enough (10 mg/L or less) before resuming normal operation.

- After cleaning with acid, neutralize the Membrane Tank and wastewater. Confirm that pH in all the tanks are within proper range before restarting the operation.

Notes:

[1]Because the chemical solution flows back slowly from the permeate side to activated sludge side by low pressure, it is more effective to clean the membrane before it is fully fouled, or during the period when increase in filtration pressure is still small since the operation has just started.

[2]Never lift the Membranes without conducting filtration for at least thirty (30) minutes after the chemical cleaning. If Membranes are removed as soon as chemical cleaning has finished, accidents due to trickle of the chemical and/or damage in Membrane Cartridges may occur.

CAUTION:
Before using chemicals, carefully read the Material Safety Data Sheet (MSDS), and wear protective equipment such as masks, goggles, gloves, etc. Misuse of any chemical may result in physical accident.

12.1 The expected output of this maintenance is to ensure that the membranes are maintained properly so that it will last for many years since it is the most expensive component of the MBR system.

F. BIOAUGMENTATION (SEEDING OF BACTERIA & ENZYME)

To maintain a healthy biomass in the Aeration Tank, bioaugmentation since the wastewater coming from the building of BSWM contains wastes from its laboratory. Some wastes from laboratories might be toxic to the activated sludge, hence, it is better to seed new bacteria and enzyme in the bioreactor to prevent biological upsets.

G. PARAMETERS TO BE ANALYZED

2. The following parameters shall be analyzed for the influent and effluent of the MBR system:

n. Biochemical Oxygen Demand (BOD)
o. Chemical Oxygen Demand (COD)
p. Total Suspended Solids (TSS)
q. pH (Range)
r. Oil & Grease
s. Color
t. Ammonia
u. Nitrate as NO_3-N
v. Phosphate
w. Chloride
x. Dissolved Oxygen (Minimum) – samples shall be taken from 9:00AM to 4:00PM
y. Fecal Coliform
z. Temperature – the natural background temperature as determined by Environment Management Bureau (EMB) shall prevail if the temperature is lower or higher than the WQG; provided that the maximum increase is only up to 10 percent and that it will not cause any risk to human health and the environment.

H. TECHNICAL STAFF REQUIREMENT

6. Supervisor- One (1) pax

- Licensed chemical or environmental engineering or any related technical course;
- Has a minimum of five (5) years' experience in the installation, operation and maintenance of a MBR System; and
- Has a minimum of ten (10) years of professional experience in wastewater treatment.

7. Membrane Specialist- One (1) pax

- College degree in chemical or environmental engineering or any related technical course;
- Has hands-on experience of at least three (3) years in the operation and maintenance of a MBR System; and
- Has a minimum of five (5) years of professional experience in wastewater treatment.

8. Process Equipment Specialist- One (1) pax

- College degree in chemical or mechanical engineering or any related technical course;
- Has a minimum of three (3) years' experience in the installation and maintenance of the process equipment installed in the MBR Wastewater Treatment System of BSWM; and
- Has a minimum of five (5) years of professional experience in wastewater treatment.

9. MBR Technicians- Two (2) pax

- Technical course graduate;
- Has a minimum of three (3) years' experience in the operation and maintenance of MBR systems; and

- Has a minimum of five (5) years of professional experience in wastewater treatment.

10. Safety Officer- (1) pax

- Graduate of any four (4) or five (5) year course;
- Has completed either the Basic Occupational Safety and Health (BOSH) or Construction Occupational Safety and Health (COSH) training; and
- Has a minimum of three (3) years' experience in the operation and maintenance of MBR systems.

NOTE: Please submit all evidence to support the qualifications of the Technical Personnel

I. ESTIMATED COST FOR THE FISCAL YEAR 2023

The total estimated cost for the Maintenance Program for 2023 is **Two Million Five Hundred Thousand Pesos (Php 2,500,000.00)**. This cost is inclusive of the following supply and works:

7. Perform all the works mentioned above.
8. Supply all the necessary chemicals, consumables, manpower (technical staff and laborer) for the performance of the maintenance activities.
9. Conduct at least four water sampling and analysis of the influent and effluent of the MBR system (1st sampling – before start of maintenance program, 2nd-4th sampling every 30 days within the contract period. Additional sampling might be needed until final result is compliant to wastewater standard.).
10. Submit result of analysis of the influent and effluent of the MBR system.
11. Submit written periodic report (30th and 60th day or after every sampling) and final detailed and full report (90th day or after completion of maintenance) with recommendations regarding the status of operation of the MBR system.
12. Training for the authorized BSWM personnel.

J. BREAKDOWN OF COST

The total estimated cost for the Maintenance Program for 2023 of **Two Million Five Hundred Thousand Pesos (Php 2,500,000.00)** is broken down as follows:

1. **Maintenance of all components (labor, materials and equipment)**	**Php 635,800.00**
a. Material cost (paints, grease, detergents, oil, etc)	PhP 80,000.00
b. Labor (mechanic @ PhP 600/day, Lubeman @ PhP500/day for 78 working days and 10 laborers @ PhP500/day for 78 working days)	PhP 475,800.00
c. Equipment (vibration monitoring equipment, thermal gun, etc)	PhP 80,000.00
2. Membrane inspection and recovery cleaning	**Php 160,000.00**
a. Material Cost (Buffer solutions, Citric Acid, Sodium hypochlorite solution)	PhP 160,000.00
3. Bioaugmentation (seeding of bacteria & enzyme)	**Php 408,000.00**
a. Activated Sludge Booster	PhP 382,000.00
b. Labor (2 seeders for 26 days @ PhP500/day)	PhP 26,000.00
4. Wastewater sampling and analysis	**Php 288,000.00**
a. Water analysis (minimum 4 sampling)	PhP 280,000.00
b. Labor (2 samplers per sampling @ PhP1,000/sampling)	PhP 8,000.00
5. Technical Staff Requirement (90 days or 3 months)	**Php 450,000.00**
a. 1 Supervisor (PhP 40,000/month)	PhP 120,000.00
b. 1 Membrane Specialist (PhP 25,000/month)	PhP 75,000.00

c.	1 Process Equipment Specialist (PhP 25,000/month)	PhP 75,000.00
d.	2 MBR Technicians (PhP 20,000/pax/month)	PhP 120,000.00
e.	1 Safety Officer (PhP 20,000/month)	PhP 60,000.00

6.	**OCM plus Margin of Profit (15%)**	**PhP 290,970.00**
7.	**Value Added Tax (12%)**	**PhP 267,230.00**

K. EXCLUSIONS

The supplier shall not be held responsible under the contract for items, components, or services delivery as stipulated below:

5. Supply of spare parts, tools, or materials for equipment correction/repair service;
6. Upgrade or improvements on the hardware;
7. Any mechanical or electrical breakdown involving components that has been added, substituted, or modified without prior notice to the supplier;
8. Any failure due to fire, lightning, explosion, storm, collision, vandalism, water damage, earthquake, flood, radiation, or contamination; and losses caused by intentional actions, negligence, intentional overloading, improper testing, or the imposition of abnormal conditions;

_____

Name and Signature of Authorized Representative

_____

Company Name

_____

Date Signed

Section VIII. Checklist of Technical and Financial Documents

Notes on the Checklist of Technical and Financial Documents

The prescribed documents in the checklist are mandatory to be submitted in the Bid, but shall be subject to the following:

a. GPPB Resolution No. 09-2020 on the efficient procurement measures during a State of Calamity or other similar issuances that shall allow the use of alternate documents in lieu of the mandated requirements; or

b. Any subsequent GPPB issuances adjusting the documentary requirements after the effectivity of the adoption of the PBDs.

The BAC shall be checking the submitted documents of each Bidder against this checklist to ascertain if they are all present, using a non-discretionary "pass/fail" criterion pursuant to Section 30 of the 2016 revised IRR of RA No. 9184.

Checklist of Technical and Financial Documents

I. TECHNICAL COMPONENT ENVELOPE

Class "A" Documents

Legal Documents

☐ (a) Valid PhilGEPS Registration Certificate (Platinum Membership) (all pages) in accordance with Section 8.5.2 of the IRR;

Technical Documents

☐ (b) Statement of the prospective bidder of all its ongoing government and private contracts, including contracts awarded but not yet started, if any, whether similar or not similar in nature and complexity to the contract to be bid; **and**

☐ (c) Statement of the bidder's Single Largest Completed Contract (SLCC) similar to the contract to be bid, except under conditions provided for in Sections 23.4.1.3 and 23.4.2.4 of the 2016 revised IRR of RA No. 9184, within the relevant period as provided in the Bidding Documents; **and**

☐ (d) Original copy of Bid Security. If in the form of a Surety Bond, submit also a certification issued by the Insurance Commission;
or
Original copy of Notarized Bid Securing Declaration; **and**

☐ (e) Conformity with the Technical Specifications, which may include production/delivery schedule, manpower requirements, and/or after-sales/parts, if applicable; **and**

☐ (f) Original duly signed Omnibus Sworn Statement (OSS);
and if applicable, Original Notarized Secretary's Certificate in case of a corporation, partnership, or cooperative; or Original Special Power of Attorney of all members of the joint venture giving full power and authority to its officer to sign the OSS and do acts to represent the Bidder.

Financial Documents

☐ (g) The prospective bidder's computation of Net Financial Contracting Capacity (NFCC);
or
A committed Line of Credit from a Universal or Commercial Bank in lieu of its NFCC computation.

Class "B" Documents

☐ (h) If applicable, a duly signed joint venture agreement (JVA) in case the joint venture is already in existence;
or
duly notarized statements from all the potential joint venture partners stating that they will enter into and abide by the provisions of the JVA in the instance that the bid is successful.

Other documentary requirements under RA No. 9184 (as applicable)

☐ (i) *[For foreign bidders claiming by reason of their country's extension of reciprocal rights to Filipinos]* Certification from the relevant government office of their country stating that Filipinos are allowed to participate in government procurement activities for the same item or product.

☐ (j) Certification from the DTI if the Bidder claims preference as a Domestic Bidder or Domestic Entity.

FINANCIAL COMPONENT ENVELOPE

☐ (a) Original of duly signed and accomplished Financial Bid Form; **and**

☐ (b) Original of duly signed and accomplished Price Schedule(s).


Republic of the Philippines
gppb
Government Procurement Policy Board

Annex A: Bid Securing Declaration Form

[*shall be submitted with the Bid if bidder opts to provide this form of Bid Security*]

REPUBLIC OF THE PHILIPPINES)
CITY OF _____) S.S

BID SECURING DECLARATION

Project Identification No.: [Insert number]

To: [*Insert name and address of the Procuring Entity*]

I/We, the undersigned, declare that:

1. I/We understand that, according to your conditions, bids must be supported by a Bid Security, which may be in the form of a Bid Securing Declaration.

2. **I/We shall furnish the required performance security within ten (10) calendar days in/ Case of receipt of Notice of Award (*pursuant to GPPB Circular No. 04-2020 and GPPB Resolution No. 16-2020*).**

3. I/We accept that: (a) I/we will be automatically disqualified from bidding for any procurement contract with any procuring entity for a period of two (2) years upon receipt of your Blacklisting Order; and, (b) I/we will pay the applicable fine provided under Section 6 of the Guidelines on the Use of Bid Securing Declaration, within fifteen (15) days from receipt of the written demand by the procuring entity for the commission of acts resulting to the enforcement of the bid securing declaration under Sections 23.1(b), 34.2, 40.1 and 69.1, except 69.1(f),of the IRR of RA No. 9184; without prejudice to other legal action the government may undertake.

4. I/We understand that this Bid Securing Declaration shall cease to be valid on the following circumstances:

a. Upon expiration of the bid validity period, or any extension thereof pursuant to your request;
b. I am/we are declared ineligible or post-disqualified upon receipt of your notice to such effect, and (i) I/we failed to timely file a request for reconsideration or (ii) I/we filed a waiver to avail of said right; and

c. I am/we are declared the bidder with the Lowest Calculated Responsive Bid, and I/we have furnished the performance security and signed the Contract.

IN WITNESS WHEREOF, I/We have hereunto set my/our hand/s this _____day of [*month*] [*year*] at [*place of execution*].

[*Insert NAME OF BIDDER OR ITS AUTHORIZED REPRESENTATIVE*]
[*Insert signatory's legal capacity]*
Affiant

[Jurat]
[*Format shall be based on the latest Rules on Notarial Practice*]

REFERENCE: GPPB RESOLUTION NO. 16-2020 / GPPB CIRCULAR NO. 04-2020

Download from: https://www.gppb.gov.ph/downloadables.php

Price Schedule for Goods Offered from Abroad

[shall be submitted with the Bid if bidder is offering goods from Abroad]

For Goods Offered from Abroad

Name of Bidder _____ Project ID No._____ Page ___ of ___

1	2	3	4	5	6	7	8	9
Item	Description	Country of origin	Quantity	Unit price CIF port of entry (specify port) or CIP named place (specify border point or place of destination)	Total CIF or CIP price per item (col. 4 x 5)	Unit Price Delivered Duty Unpaid (DDU)	Unit price Delivered Duty Paid (DDP)	Total Price delivered DDP (col 4 x 8)

Name: _____

Legal Capacity: _____

Signature: _____

Duly authorized to sign the Bid for and behalf of: _____

Price Schedule for Goods Offered from Within the Philippines

[shall be submitted with the Bid if bidder is offering goods from within the Philippines]

For Goods Offered from Within the Philippines

Name of Bidder _____ Project ID No._____ Page ___of___

1	2	3	4	5	6	7	8	9	10
Item	Description	Country of origin	Quantity	Unit price EXW per item	Transportation and all other costs incidental to delivery, per item	Sales and other taxes payable if Contract is awarded, per item	Cost of Incidental Services, if applicable, per item	Total Price, per unit (col 5+6+7+ 8)	Total Price delivered Final Destination (col 9) x (col 4)

Name: _____

Legal Capacity: _____

Signature: _____

Duly authorized to sign the Bid for and behalf of: _____

Contract Agreement Form for the Procurement of Goods (Revised)

[Not required to be submitted with the Bid, but it shall be submitted within ten (10) days after receiving the Notice of Award]

CONTRACT AGREEMENT

THIS AGREEMENT made the _____ day of _____ 20_____ between [name of PROCURING ENTITY] of the Philippines (hereinafter called "the Entity") of the one part and [name of Supplier] of [city and country of Supplier] (hereinafter called "the Supplier") of the other part;

WHEREAS, the Entity invited Bids for certain goods and ancillary services, particularly [brief description of goods and services] and has accepted a Bid by the Supplier for the supply of those goods and services in the sum of *[contract price in words and figures in specified currency]* (hereinafter called "the Contract Price").

NOW THIS AGREEMENT WITNESSETH AS FOLLOWS:

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Conditions of Contract referred to.

2. The following documents as required by the 2016 revised Implementing Rules and Regulations of Republic Act No. 9184 shall be deemed to form and be read and construed as integral part of this Agreement, *viz.*:

    i. Philippine Bidding Documents (PBDs);
        i. Schedule of Requirements;
        ii. Technical Specifications;
        iii. General and Special Conditions of Contract; and
        iv. Supplemental or Bid Bulletins, if any

    ii. Winning bidder's bid, including the Eligibility requirements, Technical and Financial Proposals, and all other documents or statements submitted;

        Bid form, including all the documents/statements contained in the Bidder's bidding envelopes, as annexes, and all other documents submitted (*e.g.*, Bidder's response to request for clarifications on the bid), including corrections to the bid, if any, resulting from the Procuring Entity's bid evaluation;

    iii. Performance Security;

    iv. Notice of Award of Contract; and the Bidder's conforme thereto; and

    v. Other contract documents that may be required by existing laws and/or the Procuring Entity concerned in the PBDs. **Winning bidder agrees that additional contract documents or information prescribed by the GPPB that are subsequently required for submission after the contract execution, such as the Notice to Proceed, Variation Orders, and Warranty Security, shall likewise form part of the Contract.**

3. In consideration for the sum of *[total contract price in words and figures]* or such other sums as may be ascertained, *[Named of the bidder]* agrees to *[state the object of the contract]* in accordance with his/her/its Bid.

4. The *[Name of the procuring entity]* agrees to pay the above-mentioned sum in accordance with the terms of the Bidding.

IN WITNESS whereof the parties hereto have caused this Agreement to be executed in accordance with the laws of the Republic of the Philippines on the day and year first above written.

[Insert Name and Signature]	*[Insert Name and Signature]*
[Insert Signatory's Legal Capacity]	*[Insert Signatory's Legal Capacity]*
for:	*for:*
[Insert Procuring Entity]	*[Insert Name of Supplier]*

Acknowledgment

[Format shall be based on the latest Rules on Notarial Practice]

Omnibus Sworn Statement (Revised)

[shall be submitted with the Bid]

REPUBLIC OF THE PHILIPPINES)
CITY/MUNICIPALITY OF _____) S.S.

AFFIDAVIT

I, [Name of Affiant], of legal age, [Civil Status], [Nationality], and residing at [Address of Affiant], after having been duly sworn in accordance with law, do hereby depose and state that:

1. *[Select one, delete the other:]*

   [If a sole proprietorship:] I am the sole proprietor or authorized representative of [Name of Bidder] with office address at [address of Bidder];

   [If a partnership, corporation, cooperative, or joint venture:] I am the duly authorized and designated representative of [Name of Bidder] with office address at [address of Bidder];

2. *[Select one, delete the other:]*

   [If a sole proprietorship:] As the owner and sole proprietor, or authorized representative of [Name of Bidder], I have full power and authority to do, execute and perform any and all acts necessary to participate, submit the bid, and to sign and execute the ensuing contract for [Name of the Project] of the [Name of the Procuring Entity], as shown in the attached duly notarized Special Power of Attorney;

   [If a partnership, corporation, cooperative, or joint venture:] I am granted full power and authority to do, execute and perform any and all acts necessary to participate, submit the bid, and to sign and execute the ensuing contract for [Name of the Project] of the [Name of the Procuring Entity], as shown in the attached [state title of attached document showing proof of authorization (e.g., duly notarized Secretary's Certificate, Board/Partnership Resolution, or Special Power of Attorney, whichever is applicable;)];

3. [Name of Bidder] is not "blacklisted" or barred from bidding by the Government of the Philippines or any of its agencies, offices, corporations, or Local Government Units, foreign government/foreign or international financing institution whose blacklisting rules have been recognized by the Government Procurement Policy Board, **by itself or by relation, membership, association, affiliation, or controlling interest with another blacklisted person or entity as defined and provided for in the Uniform Guidelines on Blacklisting;**

4. Each of the documents submitted in satisfaction of the bidding requirements is an authentic copy of the original, complete, and all statements and information provided therein are true and correct;

5. [Name of Bidder] is authorizing the Head of the Procuring Entity or its duly authorized representative(s) to verify all the documents submitted;

6. *[Select one, delete the rest:]*

   [If a sole proprietorship:] The owner or sole proprietor is not related to the Head of the Procuring Entity, members of the Bids and Awards Committee (BAC), the Technical

Working Group, and the BAC Secretariat, the head of the Project Management Office or the end-user unit, and the project consultants by consanguinity or affinity up to the third civil degree;

[If a partnership or cooperative:] None of the officers and members of *[Name of Bidder]* is related to the Head of the Procuring Entity, members of the Bids and Awards Committee (BAC), the Technical Working Group, and the BAC Secretariat, the head of the Project Management Office or the end-user unit, and the project consultants by consanguinity or affinity up to the third civil degree;

[If a corporation or joint venture:] None of the officers, directors, and controlling stockholders of *[Name of Bidder]* is related to the Head of the Procuring Entity, members of the Bids and Awards Committee (BAC), the Technical Working Group, and the BAC Secretariat, the head of the Project Management Office or the end-user unit, and the project consultants by consanguinity or affinity up to the third civil degree;

7. *[Name of Bidder]* complies with existing labor laws and standards; and

8. *[Name of Bidder]* is aware of and has undertaken the responsibilities as a Bidder in compliance with the Philippine Bidding Documents, which includes:

   a. Carefully examining all of the Bidding Documents;
   b. Acknowledging all conditions, local or otherwise, affecting the implementation of the Contract;
   c. Making an estimate of the facilities available and needed for the contract to be bid, if any; and
   d. Inquiring or securing Supplemental/Bid Bulletin(s) issued for the *[Name of the Project]*.

9. *[Name of Bidder]* did not give or pay directly or indirectly, any commission, amount, fee, or any form of consideration, pecuniary or otherwise, to any person or official, personnel or representative of the government in relation to any procurement project or activity.

10. **In case advance payment was made or given, failure to perform or deliver any of the obligations and undertakings in the contract shall be sufficient grounds to constitute criminal liability for Swindling (Estafa) or the commission of fraud with unfaithfulness or abuse of confidence through misappropriating or converting any payment received by a person or entity under an obligation involving the duty to deliver certain goods or services, to the prejudice of the public and the government of the Philippines pursuant to Article 315 of Act No. 3815 s. 1930, as amended, or the Revised Penal Code.**

IN WITNESS WHEREOF, I have hereunto set my hand this __ day of ___, 20__ at _____, Philippines.

[Insert NAME OF BIDDER OR ITS AUTHORIZED REPRESENTATIVE]
[Insert signatory's legal capacity]
Affiant

[Jurat]
[Format shall be based on the latest Rules on Notarial Practice]

Performance Securing Declaration (Revised)

[if used as an alternative performance security but it is not required to be submitted with the Bid, as it shall be submitted within ten (10) days after receiving the Notice of Award]

REPUBLIC OF THE PHILIPPINES)
CITY OF _____) S.S.

PERFORMANCE SECURING DECLARATION

Invitation to Bid: [Insert Reference Number indicated in the Bidding Documents]
To: [Insert name and address of the Procuring Entity]

I/We, the undersigned, declare that:

1. I/We understand that, according to your conditions, to guarantee the faithful performance by the supplier/distributor/manufacturer/contractor/consultant of its obligations under the Contract, I/we shall submit a Performance Securing Declaration within a maximum period of ten (10) calendar days from the receipt of the Notice of Award prior to the signing of the Contract.

2. I/We accept that: I/we will be automatically disqualified from bidding for any procurement contract with any procuring entity for a period of one (1) year for the first offense, or two (2) years <u>for the second offense</u>, upon receipt of your Blacklisting Order if I/We have violated my/our obligations under the Contract;

3. I/We understand that this Performance Securing Declaration shall cease to be valid upon:

   a. issuance by the Procuring Entity of the Certificate of Final Acceptance, subject to the following conditions:
      i. Procuring Entity has no claims filed against the contract awardee;
      ii. It has no claims for labor and materials filed against the contractor; and
      iii. Other terms of the contract; or

   b. replacement by the winning bidder of the submitted PSD with a performance security in any of the prescribed forms under Section 39.2 of the 2016 revised IRR of RA No. 9184 as required by the end-user.

IN WITNESS WHEREOF, I/We have hereunto set my/our hand/s this ____ day of [month] [year] at [place of execution].

[Insert NAME OF BIDDER OR ITS AUTHORIZED REPRESENTATIVE]
[Insert signatory's legal capacity]
Affiant

<u>[Jurat]</u>
[Format shall be based on the latest Rules on Notarial Practice]

Statement of all Ongoing Government & Private Contracts Including Contracts Awarded but not yet Started

Business Name: :_____

Business Address: :_____

Name of Contract/ Project Cost	a. Owner's Name b. Address c. Telephone Nos.	Nature of Work	Bidders Role		a. Date Awarded b. Date Started c. Date of Completion	% of Accomplishment		Value of Outstanding Works / Undelivered Portion
			Description	%		Planned	Actual	
Government								
Private								
						Total Cost		

Submitted by: :_____

(Printed Name and Signature)

Designation: :_____

Date: :_____

Statement of Completed Similar Contracts

Business Name:
Business Address:

Name of Contract/ Project Cost	a. Owner's Name b. Address c. Telephone Nos.	Nature of Work	Bidders Role		a. Date Awarded b. Date Started c. Date of Completion	Value of Works
			Description	%		
Note: The following documents shall be presented for verification of the above statement during Post-Qualification:					Total	

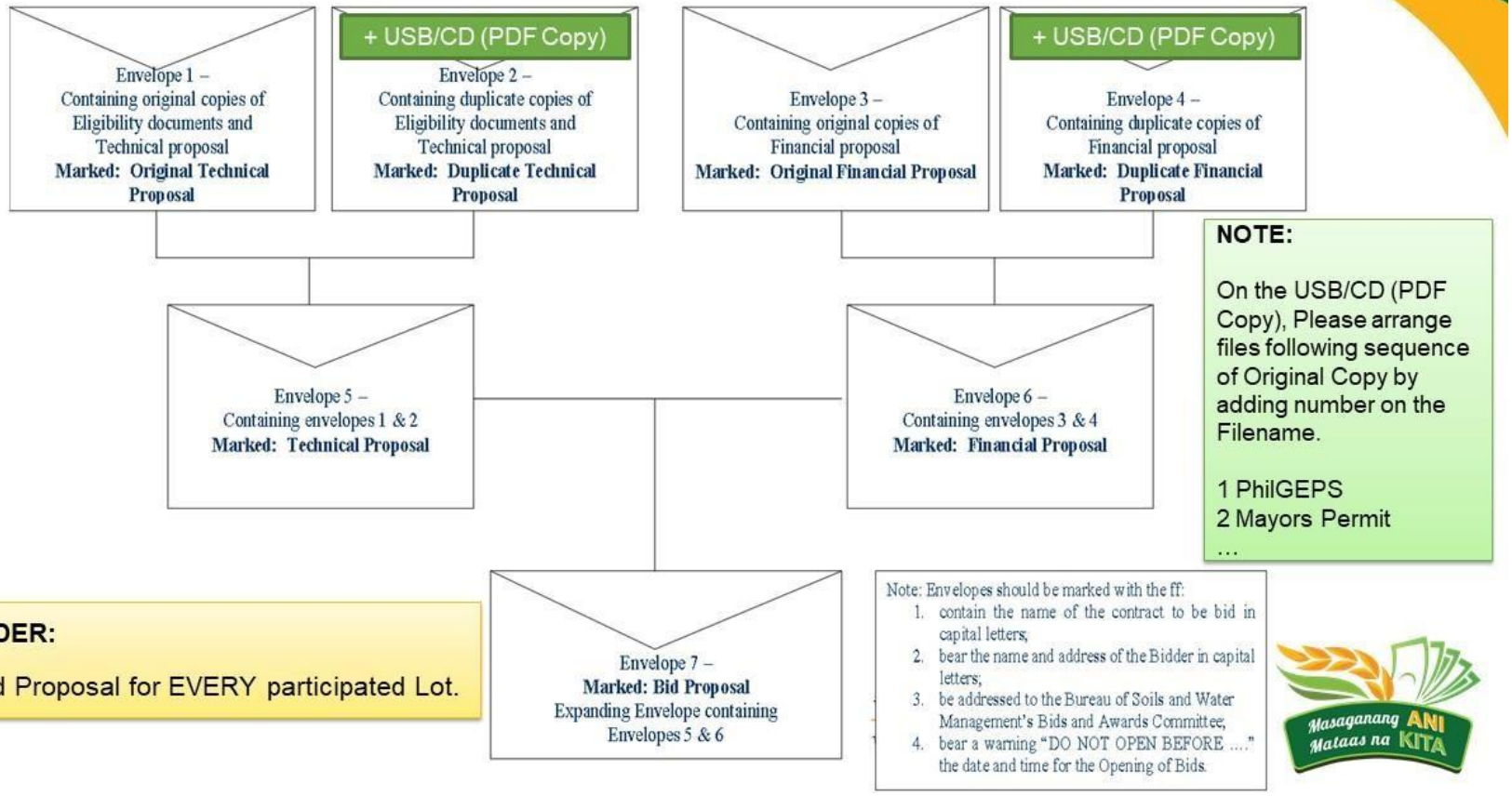
1 Notice of Award OR Notice to Proceed issued by the End user OR its equivalent;
2 Copy of actual contract OR its equivalent; and
3 Certificate of Completion OR End-user's Acceptance OR Proof of payment

Submitted by: :_____
(Printed Name and Signature)

Designation: :_____

Date:

Sealing and Marking of Bid:



Republic of the Philippines
Department of Agriculture
BUREAU OF SOILS AND WATER MANAGEMENT
SRDC Bldg., Elliptical Road corner Visayas Avenue,
Diliman, Quezon City 1101

INVITATION TO BID
MAINTENANCE OF SUBMERGED MEMBRANE BIO-REACTOR FOR CY 2023- IB NO: BSWM-2023-01-019

1. The Bureau of Soils and Water Management, through the **General Appropriation Act for CY 2023** intends to apply the sum of **Two Million Five Hundred Thousand Pesos (Php 2,500,000.00)** being the ABC to payments under the contract for **MAINTENANCE OF SUBMERGED MEMBRANE BIO-REACTOR FOR CY 2023- IB NO: BSWM-2023-01-019.** Bids received in excess of the ABC shall be automatically rejected at bid opening.

2. The Bureau of Soils and Water Management now invites bids for the above Procurement Project. **Delivery of the Services is required on March- November 2023.** Bidders should have completed, **within two (2) consecutive years** from the date of submission and receipt of bids, a contract similar to the Project. The description of an eligible bidder is contained in the Bidding Documents, particularly, in Section II (Instructions to Bidders).

3. Bidding will be conducted through open competitive bidding procedures using a non-discretionary "pass/fail" criterion as specified in the 2016 revised Implementing Rules and Regulations (IRR) of Republic Act (RA) No. 9184.

   Bidding is restricted to Filipino citizens/sole proprietorships, partnerships, or organizations with at least sixty percent (60%) interest or outstanding capital stock belonging to citizens of the Philippines, and to citizens or organizations of a country the laws or regulations of which grant similar rights or privileges to Filipino citizens, pursuant to RA 5183.

4. Prospective Bidders may obtain further information from BUREAU OF SOILS AND WATER MANAGEMENT – BIDS AND AWARDS COMMITTEE SECRETARIAT'S OFFICE and inspect the Bidding Documents at the address given below during **MONDAY TO FRIDAY, 8:00AM TO 5:00PM EXCEPT ON DECLARED HOLIDAYS OR WORK SUSPENSION.**

5. A complete set of Bidding Documents may be acquired by interested Bidders on **January 16-February 8, 2023, 9:00AM** from the address and website below and upon payment of the applicable fee for the Bidding Documents, pursuant to the latest Guidelines issued by the GPPB, in the amount of Php 2,000.00. The Procuring Entity shall allow the bidder to present its proof of payment for the fees to BAC Secretariat on or before the deadline of Submission and Opening of Bids.

6. The BUREAU OF SOILS AND WATER MANAGEMENT will hold a **Pre-Bid Conference** on **January 26, 2023 9:30AM at BSWM Convention Hall** shall be open to prospective bidders. Pre-Bid Conference will be available **"live"** thru **BSWM Procurement Service FB Page (https://www.facebook.com/bswmpms).** Furthermore, all interested bidders can participate through videoconferencing. Please coordinate with BAC Secretariat at least a day before the meeting at bac@bswm.da.gov.ph .

7. **Bids must be duly received** by the BAC Secretariat through manual submission at the office address indicated below on or before **February 9, 2023, 9:00AM**. Late bids shall not be accepted.

8. All Bids must be accompanied by a bid security in any of the acceptable forms and in the amount stated in ITB Clause 16.

8. **Bid opening shall be on February 9, 2023, 1:30PM** at the at **BSWM CONVENTION HALL**, 2ND FLOOR, SRDC BLDG., VISAYAS AVE. COR. ELLIPTICAL ROAD, DILIMAN, QUEZON CITY and through videoconferencing/webcasting via ZOOM and streamed live through BSWM Procurement Service Facebook Page. Bids will be opened in the presence of the bidders' representatives who choose to attend the activity.

During the opening of bids, Bidder's representative must present his/her Company Identification Card and Authorization Letter from the Head of the Company.

10. Schedules of the above-mentioned bidding is subject to change due to the Community Quarantine enforced by the government in line with the COVID-19 pandemic. Please refer to the BSWM PhilGEPS posting for updates (https://www.philgeps.gov.ph/) and BSWM Procurement Service FB Page (https://www.facebook.com/bswmpms).

11. The BUREAU OF SOILS AND WATER MANAGEMENT reserves the right to reject any and all bids, declare a failure of bidding, or not award the contract at any time prior to contract award in accordance with Sections 35.6 and 41 of the 2016 revised IRR of RA No. 9184, without thereby incurring any liability to the affected bidder or bidders.

12. For further information, please refer to:
DENISE A. SOLANO
BIDS AND AWARDS COMMITTEE SECRETARIAT'S OFFICE
2ND FLOOR, SRDC BLDG.,
VISAYAS AVE. COR. ELLIPTICAL ROAD, DILIMAN, QUEZON CITY
TELEFAX NUMBER: +63-2-8273-2474 loc 3218
EMAIL ADDRESS: bac@bswm.da.gov.ph or bswm.bacsec@gmail.com WEBSITE: www.bswm.gov.ph
FB Page: https://www.facebook.com/bswmpms

You may visit the following websites:
For downloading of Bidding Documents:
PhilGEPS- https://notices.philgeps.gov.ph/, BSWM Website- www.bswm.gov.ph or BSWM Procurement Service Facebook Page- https://www.facebook.com/bswmpms .

January 12, 2023

ENGR. EDUARDO V. ALBERTO
Chairperson, Bids and Awards Committee

Terms of Reference
Maintenance of the Submerged Membrane Bio-reactor (SMBR)

A. BACKGROUND

The Bureau of Soils and Water Management (BSWM) has acquired a Wastewater Treatment System using Membrane Bioreactor (MBR) technology to treat the wastewater being generated by its laboratory and its existing sewerage system. MBR system is one of the most advanced biological wastewater treatment system in terms of the quality of treated water that it can produce. The treated water can be reused for toilet flushing, garden irrigation, fire fighting water, etc.

The whole MBR system is composed of the Equalization and Neutralization Tank, Aeration Tank, Membrane Tank, Waste Activated Sludge (WAS) Tank, Effluent Tank, aeration and pumping equipments, pipelines, measuring instruments, membrane filter and protection interlock system. This state-of-the-art MBR system is expected to have a useful life of fifteen (15) years with a good maintenance program in place.

It is critical that a maintenance program is performed to the whole MBR system through an annual maintenance contract. The supplier shall be tasked to carry out the implementation of the maintenance program of the whole system, taking into consideration that intricate knowledge and skills are required to lengthen the useful life of the membrane filter, which is the most expensive component of the whole system. The supplier shall provide the skilled manpower, tools, consumables, and other resources necessary to carry out the maintenance program of the MBR system.

B. OBJECTIVE

The objective of the service contract is for the supplier to conduct site visitations to perform equipment checks and maintenance activities and to conduct water sampling and analysis of the influent and effluent of the MBR system of BSWM. This is to ensure that the MBR system is operating properly and breakdown of equipments are prevented.

C. SCOPE OF WORK

The maintenance program is focused on five (5) main areas:

1. To analyze gathered data from the operation of the facility and advise the BSWM on the existing concerns related to the operation of the MBR system;

2. To execute the specific maintenance requirement for each component of the MBR system;

3. To provide supervision, expert and skilled manpower for the implementation of the maintenance program;

4. To provide cleaning materials, tools, equipments, consumables, including chemicals for the membrane filter cleaning and motor lubrication; and

5. To advise the BSWM regarding the required procurement of spares and replacement parts.

D. MAINTENANCE PROCEDURE

1. Interior and Exterior of the Facility

1.1 The interior and exterior portions of the MBR Wastewater Treatment System shall be inspected. Rusty parts must be repainted and broken or damaged components shall be repaired or replaced immediately.

1.2 The expected output of this maintenance is to ensure that the metal parts of the MBR system will last and not be damaged by corrosion. Furthermore, this is also to ensure that the whole MBR system will be working properly and as designed.

2. Equalization and Neutralization Tank

2.1 To maintain the Equalization and Neutralization Tank, these are the steps to be done:

a. Open the manhole covers and check for accumulation of solids and other waste materials;
b. Check the level of the wastewater;
c. Check the condition of the float sensors. Test its functionality and interlocking function through the main control panel. Thoroughly clean the surface of the float switch;
d. If there's uneven aeration, check the condition of the diffusers. Drain the tank by treating continuously and reducing the level of the tank until the diffusers are exposed. Declog and clean the diffusers by soaking it in 0.5% sodium hypochlorite (NaOCl) solution. Ensure that the diffusers are properly tightened after placing it back in the diffuser manifold.

2.2 The expected output of this maintenance is to ensure that the level sensors and diffusers of the Equalization and Neutralization Tank are working properly.

3. Aeration Tank

3.1 The Aeration Tank is where the biological degradation of wastewater is happening. Therefore, it is very critical that it is always working properly. The maintenance steps for the tank:

a. Open the manhole cover and check the level of the wastewater;
b. Check the condition of the float sensors. Test its functionality and interlocking function through the main control panel. Thoroughly clean the surface of the float switch;
c. If there's uneven aeration, check the condition of the diffusers. Drain the tank by treating continuously and reducing the level of the tank until the diffusers are exposed. Declog and clean the diffusers by soaking it in 0.5% sodium hypochlorite

(NaOCl) solution. Ensure that the diffusers are properly tightened after placing it back in the diffuser manifold.

3.2 The expected output of this maintenance is to ensure that the level sensors and diffusers of the Aeration Tank are working properly.

4. Pumps (6 units)

4.1 To ensure that the process of the MBR system is working properly, all pumps must be maintained to prevent downtime. The maintenance steps to be conducted:

a. Check the oil level. Change oil if it's no longer transparent;
b. Inspect the cable entry;
c. Inspect for leakage especially when the pump has been in use for a long time;
d. Inspect the housing of the motor;
e. Unscrew the inspection plug of the housing of the motor;
f. Inspect the plug if water is present due to condensation;
g. Inspect for corrosion;
h. Check the rubber gasket;
i. Check for abnormal sounds during operation. Conduct vibration check. Also check the temperature of the motors. Align the pumps if the vibration is abnormal.

4.2 The expected output of this maintenance is to ensure that all pumps of the whole MBR system are working properly as designed.

5. Blowers (6 units)

5.1 Blowers are necessary to ensure that the biomass in the Aeration Tank are provided with sufficient oxygen to maintain aerobic condition. Aside from this, this is also critical in providing air scouring in the membrane tank to ensure that the solids will not accumulate on the surface of the membranes. Furthermore, these are also used in ensuring that the influent is properly equalized/mixed in the Equalization and Neutralization Tank and also to maintain aerobic condition in the WAS Tank. The maintenance steps for the blowers:

a. Check the cable connections for deterioration;
b. Check the pressure gauge. Adjust if necessary;
c. Check the oil level;
d. Change/replenish the oil if necessary;
e. Check the intake filters;
f. Clean the filters. Replace the filters annually or when necessary;
g. Inspect for leakage especially when the blowers are in use for a long time;
h. Inspect the housing of the motors;
i. Unscrew the inspection plug of the housing of the motor;
j. Inspect the plugs if water is present due to condensation;
k. Inspect for corrosion;
l. Check the rubber gaskets;
m. Check for abnormal sounds. Conduct vibration check. Also check the temperature of the motors. Align the blowers if the vibration is abnormal.

5.2 The expected output of this maintenance is to ensure that all the blowers of the whole MBR system are working properly as designed.

6. pH Meter and Controller

6.1 The pH of the wastewater is critical in ensuring that the biomass in the Aeration Tank of the MBR system will not die. Very low or very high pH value of the wastewater can washout the biomass and create an upset in the MBR system. The maintenance and calibration procedure of the pH Meter and Controller:

a. Calibrate the pH Meter using pH buffer solutions 4 and 7;
b. Check for any defects or scaling on the surface of the sensor;
c. If there are any defects, replace/repair as per instruction manual;
d. Check the cables and pH controller functions;
e. Check the acid and alkali metering pumps for leaks and abnormal sounds. Conduct repairs if necessary. Precaution in handling the metering pumps must be observed since strong acid and alkali can burn skin and clothing. Wear the necessary Personal Protective Equipment (PPE).

6.2 The expected output of this maintenance is to ensure that the pH Meter and Controller is working properly and are reading the correct pH values.

7. Permeate Flow Meter

7.1 The Permeate Flow Meter is used in setting the right flux rate for the operation of the MBR system. This is critical to ensure that the flux rate being used is within the range set by the manufacturer to prevent premature membrane damage. The maintenance procedure for the Permeate Flow Meter:

a. Evaluate if the flow meter is showing correct values;
b. Calibrate the flow meter as needed;
c. Check for any defects.

7.2 The expected output of this maintenance is to ensure that the Permeate Flow Meter is working properly and is reading the correct flow rate for flux rate calculations.

8. Wastewater Feed Flow Meter

8.1 The Wastewater Feed Flow Meter is used in setting the right flow rate to ensure that the correct Hydraulic Retention Time (HRT) is achieved in the Aeration Tank. This is critical to ensure proper biological degradation of the wastewater. The maintenance procedure for the Wastewater Feed Flow Meter:

a. Evaluate if the flow meter is functioning properly;
b. Isolate the flow meter by activating the by-pass line. Remove the flow meter and inspect for any internal damage;
c. Check for any defects;
d. Clean the internal of the flow meter by using liquid detergent.

8.2 The expected output of this maintenance is to ensure that the Wastewater Feed Flow Meter is working properly and is reading the correct flow rate for proper biological degradation.

9. Transmembrane Pressure Transmitter

9.1 The Transmembrane Pressure Transmitter indicates the level of fouling on the membrane surface. Using this Transmembrane Pressure Transmitter, the operator will know when it is already time to do onsite cleaning of the membranes. The maintenance procedure for this Transmembrane Pressure Transmitter is as follows:

a. Evaluate the performance of the transmitter;
b. Check the signal cables;
c. Check for any defects.

9.2 The expected output of this maintenance is to ensure that the Transmembrane Pressure Transmitter is working properly and is reading the correct pressure to prolong the life of the membranes.

10. Basket Strainer

10.1 The Basket Strainer is used to remove particles more than 3 millimetres. This is to ensure that there will be no foreign objects that can enter the MBR system and ultimately damage the membranes. The maintenance procedure for this Basket Strainer is as follows:

a. Check for accumulated solids or clogging in the basket strainer;
b. Thoroughly clean and remove the clogging;

10.2 The expected output of this maintenance is to ensure that the Basket Strainer is working properly to prevent large objects from getting into the Membrane Tank.

11. Pipelines

11.1 The maintenance procedure of the pipelines is as follows:

a. Check for deterioration;
b. Check for tightness;
c. Check for leakage;
d. Check exposed portions of the pipes. Repaint if necessary.

11.2 The expected output of this maintenance is to ensure that the pipelines have no leaks and are not rusted so that it will last for many years.

E. MEMBRANE INSPECTION AND RECOVERY CLEANING

Membrane inspection and recovery cleaning of the membranes are necessary for the efficient operation of the membranes. It is recommended to conduct this membrane inspection and recovery cleaning every year for a trouble-free operation. The procedure of this membrane cleaning is as follows:

a. Preparation of the Chemical Cleaning Solution

- Organic fouling of the membrane pores can be cleaned by using a dilute solution of bleach (sodium hypochlorite, NaOCl). Stock chemical solution should be diluted to 0.5~0.6%, and make approximately three (3) liters of the dilute cleaning solution per membrane cassette. However, if the sludge concentration is lower than 10,000 mg/L, dilute the chemical to 0.25%.

- Inorganic fouling (Iron, Aluminum, and/or others) of the membrane pores can be cleaned by Oxalic Acid. Prepare about three (3) liters of 0.5 to 1.0% Oxalic Acid solution per membrane cassette. If the membrane cassettes are polluted with calcium (Ca), NEVER use Oxalic Acid. Hydrochloric Acid (less than 2%) or Citric Acid (less than 0.5~1.0%) should be utilized.
  Note:
  Type of chemical, concentration, contact time, and cleaning efficiency depends on wastewater characteristics and operating conditions in each plant.

b. Suspension of Filtration and Aeration

- Stop filtration and aeration of SMU to be chemically cleaned. Close the permeate valve(s).

c. Injection of the Chemical Solution

- Make sure that the water level in Membrane Tank is 300 mm or more above the top of Membrane Case, or the permeate tubes are completely submerged.

- Inject the prepared chemical solution into every Membrane Cartridge via the injection port (injection time takes approximately 5 to 10 minutes.) Pressurized chemical injection by pump should be avoided and injection by gravity (10 kPa or less and instantaneously 20 kPa or less) is recommended. In order to prevent pressure increase within Membrane Cartridges, the chemical should be injected by, for instance, adjusting the rate with valve. Moreover, the chemical should be injected intermittently in order to release the trapped air from Membrane Cartridges.

- When cleaning a calcium carbonate fouling (caused by treating Ca in the wastewater) by acid, a careful attention should be taken since the chemical reaction would generate carbonic acid gas and this may blow out from the injection port.

d. In-Situ Chemical Cleaning

- After injection of the chemical solution, leave the Membrane Cartridges for one (1) to two (2) hours. As a guide, it should take approximately two (2) hours for cleaning organic substances and one (1) hour for cleaning inorganic substances.

e. Operation Re-Start

- Approximately fifteen (15) minutes after restarting filtration, return the permeate to the head of the plant (Equalization and Neutralization Tank).

- When cleaning with Sodium Hypochlorite, make sure the residual chlorine concentration in the permeate becomes low enough (10 mg/L or less) before resuming normal operation.

- After cleaning with acid, neutralize the Membrane Tank and wastewater. Confirm that pH in all the tanks are within proper range before restarting the operation.

Notes:

[1]Because the chemical solution flows back slowly from the permeate side to activated sludge side by low pressure, it is more effective to clean the membrane before it is fully fouled, or during the period when increase in filtration pressure is still small since the operation has just started.

[2]Never lift the Membranes without conducting filtration for at least thirty (30) minutes after the chemical cleaning. If Membranes are removed as soon as chemical cleaning has finished, accidents due to trickle of the chemical and/or damage in Membrane Cartridges may occur.

CAUTION:
Before using chemicals, carefully read the Material Safety Data Sheet (MSDS), and wear protective equipment such as masks, goggles, gloves, etc. Misuse of any chemical may result in physical accident.

12.1 The expected output of this maintenance is to ensure that the membranes are maintained properly so that it will last for many years since it is the most expensive component of the MBR system.

F. BIOAUGMENTATION (SEEDING OF BACTERIA & ENZYME)

To maintain a healthy biomass in the Aeration Tank, bioaugmentation since the wastewater coming from the building of BSWM contains wastes from its laboratory. Some wastes from laboratories might be toxic to the activated sludge, hence, it is better to seed new bacteria and enzyme in the bioreactor to prevent biological upsets.

G. PARAMETERS TO BE ANALYZED

1. The following parameters shall be analyzed for the influent and effluent of the MBR system:

   a. Biochemical Oxygen Demand (BOD)
   b. Chemical Oxygen Demand (COD)
   c. Total Suspended Solids (TSS)
   d. pH (Range)
   e. Oil & Grease
   f. Color
   g. Ammonia

h. Nitrate as NO_3-N
i. Phosphate
j. Chloride
k. Dissolved Oxygen (Minimum) – samples shall be taken from 9:00AM to 4:00PM
l. Fecal Coliform
m. Temperature – the natural background temperature as determined by Environment Management Bureau (EMB) shall prevail if the temperature is lower or higher than the WQG; provided that the maximum increase is only up to 10 percent and that it will not cause any risk to human health and the environment.

H. TECHNICAL STAFF REQUIREMENT

1. Supervisor- One (1) pax

- Licensed chemical or environmental engineering or any related technical course;
- Has a minimum of five (5) years' experience in the installation, operation and maintenance of a MBR System; and
- Has a minimum of ten (10) years of professional experience in wastewater treatment.

2. Membrane Specialist- One (1) pax

- College degree in chemical or environmental engineering or any related technical course;
- Has hands-on experience of at least three (3) years in the operation and maintenance of a MBR System; and
- Has a minimum of five (5) years of professional experience in wastewater treatment.

3. Process Equipment Specialist- One (1) pax

- College degree in chemical or mechanical engineering or any related technical course;
- Has a minimum of three (3) years' experience in the installation and maintenance of the process equipment installed in the MBR Wastewater Treatment System of BSWM; and
- Has a minimum of five (5) years of professional experience in wastewater treatment.

4. MBR Technicians- Two (2) pax

- Technical course graduate;
- Has a minimum of three (3) years' experience in the operation and maintenance of MBR systems; and
- Has a minimum of five (5) years of professional experience in wastewater treatment.

5. Safety Officer- (1) pax

- Graduate of any four (4) or five (5) year course;
- Has completed either the Basic Occupational Safety and Health (BOSH) or Construction Occupational Safety and Health (COSH) training; and
- Has a minimum of three (3) years' experience in the operation and maintenance of MBR systems.

NOTE: Please submit all evidence to support the qualifications of the Technical Personnel

I. ESTIMATED COST FOR THE FISCAL YEAR 2023

The total estimated cost for the Maintenance Program for 2023 is **Two Million Five Hundred Thousand Pesos (Php 2,500,000.00)**. This cost is inclusive of the following supply and works:

1. Perform all the works mentioned above.
2. Supply all the necessary chemicals, consumables, manpower (technical staff and laborer) for the performance of the maintenance activities.
3. Conduct at least four water sampling and analysis of the influent and effluent of the MBR system (1st sampling – before start of maintenance program, 2nd-4th sampling every 30 days within the contract period. Additional sampling might be needed until final result is compliant to wastewater standard.).
4. Submit result of analysis of the influent and effluent of the MBR system.
5. Submit written periodic report (30th and 60th day or after every sampling) and final detailed and full report (90th day or after completion of maintenance) with recommendations regarding the status of operation of the MBR system.
6. Training for the authorized BSWM personnel.

J. BREAKDOWN OF COST

The total estimated cost for the Maintenance Program for 2023 of **Two Million Five Hundred Thousand Pesos (Php 2,500,000.00)** is broken down as follows:

1. Maintenance of all components (labor, materials and equipment)	**Php 635,800.00**
a. Material cost (paints, grease, detergents, oil, etc)	PhP 80,000.00
b. Labor (mechanic @ PhP 600/day, Lubeman @ PhP500/day for 78 working days and 10 laborers @ PhP500/day for 78 working days)	PhP 475,800.00
c. Equipment (vibration monitoring equipment, thermal gun, etc)	PhP 80,000.00
2. Membrane inspection and recovery cleaning	**Php 160,000.00**
a. Material Cost (Buffer solutions, Citric Acid, Sodium hypochlorite solution)	PhP 160,000.00
3. Bioaugmentation (seeding of bacteria & enzyme)	**Php 408,000.00**
a. Activated Sludge Booster	PhP 382,000.00
b. Labor (2 seeders for 26 days @ PhP500/day)	PhP 26,000.00
4. Wastewater sampling and analysis	**Php 288,000.00**

a. Water analysis (minimum 4 sampling)	PhP 280,000.00
b. Labor (2 samplers per sampling @ PhP1,000/sampling)	PhP 8,000.00

5. Technical Staff Requirement (90 days or 3 months)	**Php 450,000.00**
a. 1 Supervisor (PhP 40,000/month)	PhP 120,000.00
b. 1 Membrane Specialist (PhP 25,000/month)	PhP 75,000.00
c. 1 Process Equipment Specialist (PhP 25,000/month)	PhP 75,000.00
d. 2 MBR Technicians (PhP 20,000/pax/month)	PhP 120,000.00
e. 1 Safety Officer (PhP 20,000/month)	PhP 60,000.00
6. OCM plus Margin of Profit (15%)	**PhP 290,970.00**
7. Value Added Tax (12%)	**PhP 267,230.00**

K. EXCLUSIONS

The supplier shall not be held responsible under the contract for items, components, or services delivery as stipulated below:

1. Supply of spare parts, tools, or materials for equipment correction/repair service;
2. Upgrade or improvements on the hardware;
3. Any mechanical or electrical breakdown involving components that has been added, substituted, or modified without prior notice to the supplier;
4. Any failure due to fire, lightning, explosion, storm, collision, vandalism, water damage, earthquake, flood, radiation, or contamination; and losses caused by intentional actions, negligence, intentional overloading, improper testing, or the imposition of abnormal conditions;