

**DEPLOYABLE, READY-TO-OPERATE PACKAGED PLANT  
Evaluation Form**

The selected MBR System Supplier will be chosen based on the system that offers the Owner the greater advantages from the standpoint of risk, cost, operation and maintenance characteristics, reliability, track record with the proposed equipment and or other factors the Owner or Engineer determines to be important in the selection process.

The evaluation criteria shall consider Cost, Technical and Management. In addition to the financial evaluation of the MBR System Cost, Engineering, Construction Cost and Maintenance Costs, the evaluator(s) shall allow careful consideration for Technical and Management evaluation parameters of Technical Design, System Flexibility, Reliability, Warranty, Technical Support Capabilities and Experience.

The MBR System Supplier shall provide all of the information required by the Bid Documents. This information, along with other design and equipment information contained in the Bid Documents or available to the Owner through information included in the Bid will be used by the Owner to determine the apparent successful Bidder. The Owner may verify information and references provided in the Bid as part of the Bid evaluation. The Owner shall be the sole judge of responsiveness as well as who is considered a Responsible Bidder and reserves the right to reject the Bid of any Bidder who does not pass any such evaluation to the sole satisfaction of the Owner.

MBR System proposals shall be evaluated using a weighted approach as shown below:

**Note to design Engineer: Verify values and statements bounded by square brackets, [ ], and remove highlighted alternates and instructions.**

**Evaluation Table**

Worksheet	Evaluation Category	Specification	Total Available Score	Supplier Score
A	<b>MBR System Cost</b>	Section [XX XX XX]	25	[XX]
B	<b>Present Worth Cost</b>	Section [XX XX XX]	25	[XX]
C	<b>Compliance with Specifications</b>	Section [XX XX XX]	3	[XX]
D	<b>Technical</b>	Section [XX XX XX]	10	[XX]
E	<b>Quality Assurance</b>	Section [XX XX XX]	10	[XX]
F	<b>Warranty &amp; Guarantee</b>	Section [XX XX XX]	7	[XX]
G	<b>Factory Acceptance Test</b>	Section [XX XX XX]	5	[XX]
H	<b>Commissioning, Training &amp; Demonstration</b>	Section [XX XX XX]	10	[XX]
I	<b>Asset Management</b>	Section [XX XX XX]	5	[XX]
	<b>Total</b>		<b>100</b>	<b>[XX]</b>

### Worksheet A – MBR SYSTEM COST

The MBR System Supplier shall provide a breakdown of the MBR system and services costs in the categories listed below.

The Owner shall be the sole judge of responsiveness as well as who is considered a Responsible Bidder and reserves the right to reject the Bid of any Bidder who does not pass any such evaluation to the sole satisfaction of the Owner.

Item	Description	Specification	Cost
A.1	Membrane Bioreactor System	Section [XX XX XX]	\$
A.2	Headworks	Section [XX XX XX]	\$
A.3	Chemical Feed Equipment	Section [XX XX XX]	\$
A.4	Solids Handling System	Section [XX XX XX]	\$
A.5	All Remaining Subsystems	Section [XX XX XX]	\$
A.6	Design & Engineering Services	Section [XX XX XX]	\$
A.7	P.E. Certification	Section [XX XX XX]	\$
A.8	Factory Acceptance Test	Section [XX XX XX]	\$
A.9	Commissioning Services	Section [XX XX XX]	\$
A.10	Training Services	Section [XX XX XX]	\$
A.11	Demonstration Services	Section [XX XX XX]	\$
A.12	Asset Management Services	Section [XX XX XX]	\$
A.13	Warranties	Section [XX XX XX]	\$
A.14	Special Tools/Spare Parts	Section [XX XX XX]	\$
A.15	Shipping	Section [XX XX XX]	\$
A.16	Building Estimate <sup>1</sup>	Technical Specs Evaluation Section [XX XX XX]1.03.B.1]	\$
A.17	MBR Interconnecting <sup>2</sup>	Technical Specs Evaluation Section [XX XX XX]1.03.B.2]	\$
A.18	Taxes	Section [XX XX XX]	\$
A.19	<b>Total</b>	Sum (A.1:A.18)	\$
<b>A</b>	<b>Score</b>	25 Points Lowest System Cost 20 Points within 10% Lowest System Cost 15 Points within 20%-11% Lowest System Cost 10 Points within 30%-21% Lowest System Cost 5 Points > 31% Lowest System Cost (Transfer score to Item A, Evaluation table)	

<sup>1</sup> Building estimate is derived from a calculation as shown in the Technical specifications evaluation section.

<sup>2</sup> Interconnection estimate is derived from a calculation as shown in the Technical specifications evaluation section.

## Worksheet B – PRESENT WORTH COST

The MBR System Supplier shall provide a breakdown of the MBR system annual maintenance costs in the categories listed below. Instructions for each category follow the Present Worth Table.

The Owner shall be the sole judge of responsiveness as well as who is considered a Responsible Bidder and reserves the right to reject the Bid of any Bidder who does not pass any such evaluation to the sole satisfaction of the Owner.

### Present Worth Table

Item	Description	Specification	Annual Cost
B.1	Guaranteed Power Cost	Section [XX XX XX]	\$
B.2	CIP Chemical Cost	Section [XX XX XX]	\$
B.3	Chemical Feed Cost	Section [XX XX XX]	\$
B.4	Membrane Replacement Cost	Section [XX XX XX]	\$
B.5	WAS Hauling Cost	Section [XX XX XX]	\$
B.6	Estimated Equipment Cost of Goods, Maintenance <sup>1</sup>	Technical Specs Evaluation Section [XX XX XX]1.03.C.1.x]	\$
B.7	Estimated Labor Cost, Maintenance <sup>2</sup>	Technical Specs Evaluation Section [XX XX XX]1.03.D.2.x]	\$
B.8	Total Cost	Sum (B.1:B.7)	\$
B	Score	25 Points Lowest PW 20 Points within 10%Lowest PW 15 Points within 20%-11% Lowest PW 10 Points within 30%-21% Lowest PW 5 Points > 31% Lowest PW (Transfer score to Item B, Evaluation table)	

<sup>1</sup> Estimated Equipment Maintenance cost is derived from a calculation as shown in the Technical specifications evaluation section.

<sup>2</sup> Estimated Labor Cost is derived from a calculation as shown in the Technical specifications evaluation section.

**B.1** The MBR System Supplier shall guarantee the power usage of the MBR System in terms of kWhr/m3. In terms of evaluation, the power guarantee and a cost of [\$0.08] per KW will determine the annual power cost.

### Power Cost Calculations

Item	Parameter	Value	Notes
B.1.1	Power Guarantee		kWhr/m3
B.1.2	Flow in m3 per year		=ADF x 1.38
<b>Total Annual Chemical Cost</b> = [(B.1.2 / B.1.1) x [\$0.08]] (Transfer Cost to Item B.1 Present Worth Table)			\$

**B.2** The MBR System Supplier shall provide all chemical costs related to maintenance and recovery cleans.

**MBR Chemical Cost Clean-in-Place Calculations**

Item	Description	Annual Volume (gal)	Unit Cost (\$/gal)	Annual Cost
Chemical 1				\$
Chemical 2				\$
<b>Total Annual Chemical Cost</b> (Transfer Cost to Item B.2 Present Worth Table)				\$

**B.3** The MBR System Supplier shall provide all chemical costs related to chemical feed systems.

**MBR Chemical Feed Cost Calculations**

Item	Description	Annual Volume (gal)	Unit Cost (\$/gal)	Annual Cost
Chemical 1				\$
Chemical 2				\$
Chemical 3				\$
<b>Total Annual Chemical Cost</b> (Transfer Cost to Item B.3 Present Worth Table)				\$

- B.4** The MBR System Supplier shall provide costs associated with membrane replacements.
- A. Membrane replacement interval shall be equal to the Bidder warranty period.
  - B. Prorated Warranty replacement interval shall be 1/2 of warranty period.
  - C. Bidder shall guarantee that membrane replacement price will not increase at a rate greater than 4%/yr or CPI/yr whichever is greater.

**Membrane Replacement Cost Calculations**

Item	Parameter	Value	Notes
B.4.1	Total Quantity of Membrane Units		-
B.4.2	Prorated Warranty or Non-prorated Warranty		Enter 0.5 for Prorated or 1.0 for Non-prorated
B.4.3	Warranty Duration		
B.4.4	Replacement Interval		= (B.4.2 x B.4.3)
B.4.5	Guarantee Membrane Cost per Unit	\$	
B.4.6	Total Replacement Cost	\$	= (B.4.1 x B.4.5)
<b>Total Annual Chemical Cost</b> = [B.4.6 / B.4.4] (Transfer Cost to Item B.4 Present Worth Table)			\$

**B.5** The MBR System Supplier shall provide WAS volume. In terms of evaluation this sludge hauling cost calculation will be determined based on ADF and MMF Flows and a hauling cost of **[\$0.15]** per gallon.

**Power Cost Calculations**

Item	Parameter	Value	Notes
B.5.1	ADF Sludge Volume		Gallons per Day
B.5.2	ADF Duration	<b>[270]</b>	Days
B.5.3	MMF Sludge Volume		Gallons per Day
B.5.4	MMF Duration	<b>[95]</b>	Days
<b>Total Annual Chemical Cost</b> = [(B.5.1 x B.5.2) + (B.5.3 x B.5.4) x <b>[\$0.15]</b> ] (Transfer Cost to Item B.5 Present Worth Table)			\$

**B.6** Estimated equipment cost of goods for maintenance is derived from an I/O calculation as shown in the Technical specifications evaluation section. Technical Specs Evaluation Section **[XX XX XX]**1.03.C.1x]

**B.7** Estimated equipment labor for maintenance is derived from an I/O calculation as shown in the Technical specifications evaluation section. Technical Specs Evaluation Section **[XX XX XX]**1.03.D.1x]

### Worksheet C – COMPLIANCE WITH SPECIFICATIONS

MBR System Suppliers package plant shall meet all of the bid specifications without exception. This applies to both commercial and technical specifications and terms.

The Owner shall be the sole judge of responsiveness as well as who is considered a Responsible Bidder and reserves the right to reject the Bid of any Bidder who does not pass any such evaluation to the sole satisfaction of the Owner.

#### Compliance Evaluation Table

Item	Description	Response	Total Available Score	Supplier Score
C.1	No Exceptions	No	3	
C.2	One or More Exceptions	Yes	0	
C	Total	Sum (C.1:C.2) (Transfer score to Item C, Evaluation table)	3	

### Worksheet D – TECHNICAL

MBR System Suppliers package plant shall meet all of the technical specifications without exception.

The Owner shall be the sole judge of responsiveness as well as who is considered a Responsible Bidder and reserves the right to reject the Bid of any Bidder who does not pass any such evaluation to the sole satisfaction of the Owner.

**Technical Evaluation Table**

Item	Description	Specification	Response	Total Available Score	Supplier Score
D.1	Standard Product	Technical Specs Evaluation Section [XX XX XX 1.02.B]	Yes	2	
			No	0	
D.2	Exceptions	Technical Specs Evaluation Section [XX XX XX 1.02.C]	Yes	0	
			No	2	
D.3	Quality Components	Technical Specs Evaluation Section [XX XX XX 1.02.D]	Engineer to Evaluate	3	
D.4	Level of Material Provided with Proposal	Technical Specs Section [XX XX XX 2.01.A]	Engineer to Evaluate	3	
D	Total	Sum (D.1:D.4) (Transfer score to Item D, Evaluation form)		10	

## Worksheet E – QUALITY ASSURANCE

MBR System Suppliers shall be experienced in providing the Goods and Special Services as described herein. MBR System Suppliers shall possess sufficient equipment, capital and manpower to provide the Goods and Special Services within the time allowed.

The Owner shall be the sole judge of responsiveness as well as who is considered a Responsible Bidder and reserves the right to reject the Bid of any Bidder who does not pass any such evaluation to the sole satisfaction of the Owner.

**Quality Assurance Evaluation Table**

Item	Description	Specification	Response	Total Available Score	Supplier Score
E.1	ISO Certification	Quality Assurance Specs Evaluation Section [XX XX XX] 1.02.B.1]	Yes	1	
			No	0	
E.2	MBR Staff	Quality Assurance Specs Evaluation Section [XX XX XX] 1.02.B.2]	>40 MBR Employees	3	
			or		
			30 MBR Employees	2	
			< 30 MBR Employees	0	
E.3	Supplier Service Center	Quality Assurance Specs Evaluation Section [XX XX XX] 1.02.B.3]	≥ 3 Company Owned MBR Service Centers	1	
			≥1 Local MBR Service Center	1	
			Less than Above	0	
E.4	Supplier Experience (Must be full system supply by MBR System Supplier)	Quality Assurance Specs Evaluation Section [XX XX XX] 1.02.B.4]	>20 MBR Installation	3	
			or		
			10 Installations	2	
			10 years MBR Installation	1	
			Less than Above	0	
<b>E</b>	<b>Total</b>	Sum (E.1:E.4) (Transfer score to Item E, Evaluation table)		10	



### Worksheet F – WARRANTY

MBR System Suppliers package plant shall meet all of the bid specifications without exception. Warranty strength evaluation will use the criteria below.

The Owner shall be the sole judge of responsiveness as well as who is considered a Responsible Bidder and reserves the right to reject the Bid of any Bidder who does not pass any such evaluation to the sole satisfaction of the Owner.

**Warranty & Guarantee Evaluation Table**

Item	Description	Specification	Response	Total Available Score	Supplier Score
F.1	Number of Compliance Data Points for Membrane Performance	Warranty Specs Evaluation Section [XX XX XX1.02.B.5.1]	3	3	
			or		
			≥ 4	0	
F.2	Prorated or Non-prorated Warranty	Warranty Specs Evaluation Section [XX XX XX1.02.B.5.1]	Prorated	0	
			Non-prorated	1	
F.3	Duration for Membrane Warranty	Technical Specs Evaluation Section [XX XX XX1.02.5.1]	5 years	0	
			or		
			> 5 years	1	
F.4	Duration for Process Warranty	Technical Specs Evaluation Section [XX XX XX1.02.5.3]	1 year	0	
			or		
			> 1 year	1	
F.5	Duration for Ancillary Equipment Warranty	Technical Specs Evaluation Section [XX XX XX1.02.5.2]	1 year	0	
			or		
			> 1 year	1	
F	Total	Sum (F.1:F.5) (Transfer score to Item F, Evaluation table)		7	

**Worksheet G – FACTORY ACCEPTANCE TEST**

MBR System Suppliers package plant shall meet all of the bid specifications without exception. Factory Acceptance Test evaluation will be scored as shown below.

The Owner shall be the sole judge of responsiveness as well as who is considered a Responsible Bidder and reserves the right to reject the Bid of any Bidder who does not pass any such evaluation to the sole satisfaction of the Owner.

**Warranty & Guarantee Evaluation Table**

<b>Item</b>	<b>Description</b>	<b>Specification</b>	<b>Response</b>	<b>Total Available Score</b>	<b>Supplier Score</b>
<b>G.1</b>	<b>The strength of the FAT shall be based on the submitted syllabus</b>	Warranty Specs Evaluation Section [XX XX XX]	Engineer to Evaluate	5	
<b>G</b>	<b>Total</b>	Sum (G.1) (Transfer score to Item G, Evaluation table)		5	

**Worksheet H – COMMISSIONING, TRAINING & DEMONSTRATION**

MBR System Suppliers package plant shall meet all of the technical specifications without exception.

The Owner shall be the sole judge of responsiveness as well as who is considered a Responsible Bidder and reserves the right to reject the Bid of any Bidder who does not pass any such evaluation to the sole satisfaction of the Owner.

**Technical Evaluation Table**

<b>Item</b>	<b>Description</b>	<b>Specification</b>	<b>Response</b>	<b>Total Available Score</b>	<b>Supplier Score</b>
<b>H.1</b>	<b>Commissioning</b>	Technical Specs Section [XX XX XX]1.01	Engineer to Evaluate	3	
<b>H.2</b>	<b>Training</b>	Technical Specs Section [XX XX XX]1.02	Engineer to Evaluate	3	
<b>H.3</b>	<b>Demonstration</b>	Technical Specs Section [XX XX XX]1.03	Engineer to Evaluate	4	
<b>H</b>	<b>Total</b>	Sum (H.1:H.3) (Transfer score to Item H, Evaluation table)		10	

## Worksheet I – ASSET MANAGEMENT

MBR System Suppliers package plant shall meet all of the technical specifications without exception.

The Owner shall be the sole judge of responsiveness as well as who is considered a Responsible Bidder and reserves the right to reject the Bid of any Bidder who does not pass any such evaluation to the sole satisfaction of the Owner.

**Technical Evaluation Table**

Item	Description	Specification	Response	Total Available Score	Supplier Score
I.1	Web Portal	Technical Specs Evaluation Section [XX XX XX 1.02.B.1]	Yes	1	
			No	0	
I.2	Interactive O&M	Technical Specs Evaluation Section [XX XX XX 1.02.B.2]	Yes	1	
			No	0	
I.3	Weekly Reporting	Technical Specs Evaluation Section [XX XX XX 1.02.B.3]	Yes	1	
			No	0	
I.4	Technical Support Website	Technical Specs Evaluation Section [XX XX XX 1.02.B.4]	Yes	1	
			No	0	
I.5	Digital System Experience	Technical Specs Evaluation Section [XX XX XX 1.02.B.5]	≥ 4 Installations	1	
			< 4 Installations	0	
I	Total	Sum (I.1:I.5) (Transfer score to Item I, Evaluation table)		5	

**END OF SECTION**