Desalination Questionaire

# GENERAL INFORMATION

 Client: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 Responsible Person \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 Address \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Tel. / Fax \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E-mail / Internet \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Requested:**

□ Further information / Plant description

□ Budget Price

□ Detailed Offer

# TECHNICAL INFORMATION

## Plant location (Town / District / Country)

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

|  |  |  |  |
| --- | --- | --- | --- |
| Level above sea (m) |  | Ambient temperature min./ max. (°C); |  |
| Relative humidity (%) |  | Max. wind speed (km/h) |  |
| Distance from sea / raw water source (m) |  | *( please add sketch or layout )* |
| Plant area (in m x m) |  |

## Plant capacity in m³/d \_\_\_\_\_\_\_\_\_\_\_\_ in m³/h \_\_\_\_\_\_\_\_\_\_\_\_

##  □ continuous □ emergency

## Hours of operation per day: \_\_\_\_\_\_\_hrs

## Required treated water quality:

 □ Drinking Water (WHO) □ Drinking Water (other Requirement)

 □ Service Water (showers, hot water, etc.)

 □ Other (please indicate) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

*(If other than WHO please add specification for required drinking water quality!)*

## Available Raw Water source:

 □ Groundwater Well □ Open Sea Intake

 □ Beach Well

 □ Other (please indicate) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 Available raw water quantity (Minimum / Maximum) m3/h

 Depth of Groundwater or Beach Well \_\_\_\_\_\_\_\_\_ m

 *(Please add specification for raw water quality according to analysis data sheet!)*

# SCOPE OF SUPPLY

## Type of plant:

 □ Containerized (open air installation) □ Skid mounted (indoor installation)

## Raw water pump station *(please indicate*):

 □ Yes

 Pipeline length \_\_\_\_\_\_ m Geodetic height \_\_\_\_\_\_ m

 □ No

 Available feed water pressure (min. / max.): \_\_\_\_\_\_\_\_\_\_ bar

## Treated water delivery to:

□ Existing storage tank

 Distance from plant \_\_\_\_\_\_ m Geodetic height \_\_\_\_\_\_ m

□ Existing network

 Distance from plant \_\_\_\_\_\_ m Geodetic height \_\_\_\_\_\_ m

 Working pressure \_\_\_\_\_\_ bar

## Storage tanks required:

|  |  |  |  |
| --- | --- | --- | --- |
|  | Capacity in m³ |  | Type of construction(Concrete, stainless steel, ... ) |
| □ raw water |  |  |  |
| □ treated water |  |  |  |

# Design requirements: Electrical

## Power Supply

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Voltage ( V ) |   |  | Frequency (Hz) |   |
| Available Power (kW) |  |  | Max. Current (A) |  |

 Power generator set required: □ Yes □ No

 Renewable energy generation required: □ Yes □ No

## Energy recovery required: □ Yes □ No

# Other Components / Auxiliaries

□ Spare parts for \_\_\_\_\_ month(s) of operation

□ Operation chemicals for \_\_\_\_\_ month(s) of operation

□ Electrical and mechanical tools *(please specify)*

□ Laboratory equipment / test-kits and laboratory chemicals for \_\_\_\_\_\_ month(s)

# Service Contract

Offer for service contract requested: □ Yes □ No

# Commercial

Offer for financing requested: □ Yes □ No

# Special, Preferences

Please, describe any special requirements not mentioned in the questionnaire.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

# Attachments:

Available Data: Raw water analysis, Treated water requirements, ... .

# Water Analysis Data Sheet:

*The following is a form for a full analysis of raw water. If less information is available please insert available data or attach copy of available information.*

**Note:** \*) Parameters required in any case \*\*) Additional parameters required for well water

**General Parameters:**

|  |  |  |  |
| --- | --- | --- | --- |
| Location |  | Sample date |  |
| Type of water (surface, well, other) |  |
| Color |  |  | Taste / Odor |  |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| pH-Value \*) | - |  |  | Electrical conductivity \*) | µS/cm |  |
| Temperature \*) | °C |  |  | Dissolved Oxygen \*\*) | mg/l |  |

**Alcalinity and Hardness:** *( use convenient unit:mg/l , ppm, meq /l or ppmCaCO3)*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Unit  | Value |  |  | Unit | Value |
| p-Alkalinity |  |  |  | Total Hardness \*\*) |  |  |
| m-Alkalinity |  |  |  | Carbonate Hardness |  |  |
| Carbon Dioxide CO2 |  |  |  |  |  |  |

**Individual ions:** *( use convenient unit:mg/l , ppm, meq /l or ppmCaCO3)*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Cations** | Unit  | Value |  | meq / l | Unit  | Value |
| Calcium \*) Ca++ |  |  |  | Bicarbonate \*) HCO3- |  |  |
| Magnesium \*) Mg++ |  |  |  | Chloride \*) Cl- |  |  |
| Sodium \*) Na+ |  |  |  | Sulfate \*) SO4-- |  |  |
| Potassium \*) K+ |  |  |  | Nitrate \*) NO3- |  |  |
| Ammonium \*) NH4+ |  |  |  | *Nitrite* NO2- |  |  |
| Total cations c(eq) | **-----** |  |  | Total anions c(eq) |  |  |

|  |  |  |
| --- | --- | --- |
| Total Dissolved solids \*) (TDS) |  |  |

**Iron, Manganese, Silica etc. :**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Iron \*\*) Fe | mg/l |  |  | Silica \*) SiO2 | mg/l |  |
| Manganese \*\*) Mn++ | mg/l |  |  | Hydrogen Sulfide \*\*) H2S | mg/l |  |

**Solids:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Total Suspended Solids | mg/l |  |  | or Turbidity \*) | NTU |  |

**Organics:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Permanganate - Index | mg/l O2 |  |  | Chemical Oxygen Demand COD | mg/l |  |
| Org. Carbon (TOC/DOC) | mg C /l |  |  | Biological Oxygen Demand BOD5 | mg/l |  |

**Other:** *(Any harmful/ toxic substance present in raw water: Oil, detergents, pesticides, heavy metals, cyanide ... )*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |