

## **TERMS OF REFERENCE (TOR)**

*For*

### **HIRING OF CONSTRUCTION FIRM FOR INSTALLATION OF WATER FILTRATION PLANT AT JAMES TOWN, ADIALA RAOD, RAWALPINDI ON ENGINEERING, PROCUREMENT AND CONSTRUCTION (EPC) BASIS**

#### **1. BACKGROUND**

Rawalpindi city is currently facing serious water related issues such as poor water supply, sanitation, and hygiene which contribute directly to high levels of childhood stunting and undermining human development. Women and children are the most vulnerable, especially in poor residential neighborhoods where sanitation is particularly inadequate and most water supplies are contaminated.

WWF-Pakistan is working on an Australia funded project titled ‘Australia-Pakistan Water Security Initiative’. The project aims to improve access to safe water and sanitation services in two disadvantaged urban communities in Islamabad and Rawalpindi in order to have safer and more reliable access to water and sanitation services, particularly for women, children and other financially vulnerable groups.

#### **2. OBJECTIVE OF THE ASSIGNMENT**

The major objective is to engage Construction Firm to provide clean drinking water to selected area of Rawalpindi through the establishment of one (01) water filtration plant (Reverse Osmosis / Ultra Filtration Unit based) on EPC basis depending upon the requirement at the site and water quality. The Construction Firm would be responsible to ensure that the selected plant will deliver performance, reliability and operational parameters.

The Construction Firm shall be fully responsible to assure the desired quality of all materials purchased, labor engaged, specifications given and physical works to be carried out under this contract. Any materials, labor, specifications or the physical works found deviating from the agreed standards, during or till one year (01) after the delivery of work, shall be deemed to be the fault of the firm, for which will be liable to make necessary corrections and repair.

#### **3. SCOPE OF WORK**

The scope of services for the Construction Firm shall be (but not limited to) as follows;

The Construction Firm shall install, commission and maintain one (01) filtration plant (including plant room) having a capacity of 1000 liters/hour in James Town, Adiyala Road Rawalpindi.

### **Detailed Engineering Design**

- a. Detail Process Design of Water Filtration Plant as per the water quality report
- b. Detail Structural design, P&ID, MEP design, Architectural design
- c. Detail Engineer's Estimate and Bill of Quantities (BOQ) / Cost estimation of civil, electrical, mechanical and plumbing works

### **Installation & Commissioning**

- a. Borehole drilling upto depth confirming or ensuring sustainable water source
- b. Civil works including construction of plant room as per the detailed engineering design provided by the firm. Civil works must include construction of grey structure and exterior and interior finishing
- c. Branding of funding agency shall be included in Civil Works
- d. Procurement and installation of state-of-the-art filtration plant (including electrical, mechanical and plumbing works) as per the detailed design for meeting WHO standards & PEQS of drinking water based on the water quality from the source
- e. Equipment with a warranty of upto one (01) year is required
- f. Complete commissioning of filtration plant

### **Operation & Maintenance**

The Construction Firm shall;

- a. Provide operation & maintenance (O&M) for one (01) year starting from the date of commissioning of water filtration plant (*including membrane cleaning etc*).
- b. Assist the community for resolving any technical issues during operation
- c. Train local plant operator for the plant operation and maintenance
- d. Be responsible for the satisfactory performance of filtration plants for continued supply of clean water as per WHO standards at all times, during O&M period
- e. Develop log book for proper operations
- f. Develop operation and maintenance manual

### **Other requirements**

- a. Under the contract, the Construction Firm is completely bound not to assign or sub contract any of the activities prescribed herein the TORs to any one, without prior permission of WWF-Pakistan
- b. The filtration plant must be capable of removing physical, biological and chemical contaminations as per the standard provided by WHO & PEQS for drinking water.

**Note:** *Land will be provided by the communities and is the responsibility of WWF-Pakistan to provide to the firm on timely basis for installation of water filtration plant.*

#### 4. EQUIPMENT SPECIFICATIONS

The equipment specification list is provided below;

<b>1. Electrical, Mechanical and Plumbing Equipment</b>	
<b>Components</b>	<b>Material Specifications</b>
Feed pumps	CNP/Grundfoss/KSB (Original)
Multi-media Sand Filter Vessel with sand	Pentair/Equivalent (Stainless Steel)
Activated Carbon filter vessel with media	Pentair/Equivalent (Stainless Steel)
Cartridge Filters	Taiwan/Equivalent
RO Membrane	Hydronautics/DOW/Equivalent
Ozonator	China/Equivalent
UV system	Philips/Equivalent
HMI + PLC/Electrical Panel	Philips/Equivalent
Backwash/CIP pump	CNP/ Grundfoss/KSB (Refurb)
Skid Structure	SS201/WCSP
High pressure Pump (RO)	CNP/Grundfoss/KSB (Refurb)
Pressure Vessel	China/KDI/Equivalent
Flow Meter	Zyst/SHLLJ/ LZT Taiwan
Pressure Gauge	Truteller/Equivalent
Pressure Switch	Danfoss
Pressure Pipes and fitting	Dadex/ Equivalent
Solenoid valve	Unidy/Equivalent
Header	Material: Stainless Steel Faisal/Equivalent
Chemical Dozing Station	Etatron/Equivalent
Water Tank	Master/Super Tuff/Equivalent (Good Quality, Food Grade with specifications and other associated documents)
Totalizer	China/Equivalent
Filter PPF	Taiwan/PK
Chlorine	PK

Antiscalent	Etatron
TDS Meter	Create/Equivalent
High Pressure Concentrate Valve	CNP/Grundfoss/KSB (Refurb)
Submersible Pump	Grundfoss/KSB/Equivalent
Complete wiring	PK/Equivalent
Sub meter, wires and other accessories	PK/Equivalent
Exhaust Fan + Fitting	PK/Pak Fans/Equivalent
<b>2. Civil Structure / Plant Room</b>	
Complete Room Facility	Dimensions 14*12*12 ft (L*W*H) + 4 ft Tapper/Shade (Including complete construction/finishing, electrical and plumbing connections, exhaust windows, complete finishing and weather shield paint, glaze tiles on walls and matte tiles (non-slippery) at the floor etc.) *Tiles Color: Walls – White, Floor – Dark Blue, Columns – Dark Blue.
Counter below headers for bottle placement and collection of water	Counter with White Tiles (3ft Height)
Ramp for handicap (With proper inclination)	Concrete ramp with tuff tiles on surface
Grill on Ramp	Aluminum Grill with proper fittings
Grill on Headers	Iron grill with paint on headers for protection
Grill on drain	Iron grill with paint on exit water drain
Gate around Filtration Plant	Iron gate at front side of plant facility for filtration plant protection
Tuff Tile flooring	Tuff Tiles flooring at the premises of plant (Grey Color)
Grass and plantation (Landscaping)	Grass and plantation for beautification/landscaping around plant

**Note:** *The equipment to be installed shall be finalized after water quality test from water source.*

*No relaxation on provided material specification is given*

*The required civil structure component is mandatory and can be changed/modified based upon site specific requirements*

Quotations for both RO/UF Plant is required from the Contractor

## 5. DELIVERABLES

The following deliverables shown in the table below shall be submitted by Construction Firm for completion of Project. The timelines of the project deliverables are stringent and non-negotiable.

Sr. No.	Deliverable
1.	Detailed Engineering Design (layout, plan & cross-section, structural, architectural, P&ID and plumbing drawings)
3.	Complete cost estimation / BOQs
4.	Site Investigation Reports regarding borehole
5.	Procurement list of all materials with name, specifications, company, warranty disclaimers etc.
7.	01 completely commissioned filtration plant and the Project Completion Report
8.	Log Book
9.	Operation and Maintenance manual

## 6. PERIOD OF CONTRACT

The duration of project & report submission is three (03) months.

## 7. REQUIRED QUALIFICATION

- The Construction Firm must have a minimum of 5 to 7 years relevant experience in installation of plants at community level.
- The firm should have past experience in construction of civil structure specifically plant rooms
- The firm must have some existing facility in Islamabad and Rawalpindi for pre award site visits and check
- Be able to demonstrate working ability under the COVID-19 (Corona Virus) circumstances as per the construction works guidelines issued by the Government of Pakistan
- Should be able to follow all the required Health, Safety and Environmental (HSE) protocols, as specified under the WWF-Pakistan HSE safeguard policy
- Should be able to comply with all the national and provincial construction standards and labor protocols

## 8. PROPOSAL SUBMISSION REQUIREMENT

- Technical proposal
- Financial proposal with rates and total cost of work against the given specifications (cost must be exclusive of all taxes)
- Profile of firm

Kindly submit the proposal in a sealed envelope to:

**Younas Awan**  
**Manager Administration**  
**WWF-Pakistan**  
**Inside Ali Institute of Education, Ferozpur Road, Lahore.**

For any queries, please write to [wwfadmin@wwf.org.pk](mailto:wwfadmin@wwf.org.pk) and copy to [fanadeem@wwf.org.pk](mailto:fanadeem@wwf.org.pk), [shrizvi@wwf.org.pk](mailto:shrizvi@wwf.org.pk) and [habbasi@wwf.org.pk](mailto:habbasi@wwf.org.pk)