



Empowered lives.  
Resilient nations.

**PROCUREMENT FOR SUPPLY,  
  
INSTALLATION, TRAINING AND COMMISSIONING  
  
OF  
  
WATER QUALITY MONITORING  
  
AND  
  
LABORATORY EQUIPMENT FOR  
  
ORASECOM MEMBER STATE OF LESOTHO**

**December 2022**

## 1. Background

### 1.1 The Orange Senqu River Commission (ORASECOM)

The Orange-Senqu River originates in the Lesotho Highlands, from where it flows westwards to its mouth at Alexander Bay/Oranjemund on the Atlantic West Coast. The river basin is the third largest in Southern Africa, after the Zambezi and the Congo, covering a total area of 1,000,000 km<sup>2</sup> of which almost 600,000 km<sup>2</sup> is inside the Republic of South Africa. Four countries – Botswana, Lesotho, Namibia and South Africa - share the Basin, and the river forms the border between South Africa and Namibia at its lower reaches.

Lesotho, the upstream country falls entirely within the basin and contributes over 40% of the stream flow from only 3.4% of the total basin area but is one of the smallest users of water from the basin. South Africa is by far the biggest user of water from the Orange-Senqu River Basin, and this use drives the economic heartland of South Africa. The Botswana part of the Basin is entirely covered by the Kalahari Desert with very little surface runoff, but groundwater contributes to the water demands in this portion of the basin.

The water requirements in the lower reaches of the river are driven primarily by irrigation and mining demands from both Namibia and South Africa, and the need to maintain environmental flows to the estuary. As the most downstream portion of a heavily used basin, water resources quality in this stretch is a concern. Similarly, the middle and lower reaches of the river are subject to periodic and often devastating floods. The Orange River estuary is ranked as one of the most important wetland systems in Southern Africa but has experienced environmental degradation. This wetland system was re-designated as a Ramsar Site, but because of its threatened status it was placed on Montreux Record in 1995.

The effective management of the Orange-Senqu River Basin is, therefore, particularly complex, but is also vital to the economy of the region. As a result, the riparian States prioritised this basin for the establishment of a Shared Watercourse Institution under the revised Southern African Development Community (SADC) Revised Protocol on Shared Watercourses. ORASECOM was one of the first of the Shared Watercourses Institutions to be established in SADC.

ORASECOM is an advisory body, issuing recommendations to its Member States (The Parties) aimed at optimizing the development and management of the water resources of the Orange-Senqu River Basin for the benefit of all the people in the Parties.

### 1.2 The ORASECOM Agreement

The Agreement establishes Council as a technical advisor to the Parties on matters relating to the development, utilization, and conservation of the water resources in the River System. The Parties may also assign other functions pertaining to the development and utilisation of water resources to the Commission. Article 5 of the Agreement empowers Council to take all measures to make recommendations on *inter alia*; water availability in the basin, equitable and reasonable sharing of water, studies on the development of the River System, the extent to which stakeholders should be involved in management of the system, the prevention of pollution and the control of aquatic weeds, and plans for emergency situations.

All recommendations provided by Council to Parties must be contained in a report, signed by the leader of each Delegation. These reports must also include estimates of the cost of implementing the recommendation and may suggest how these costs may be apportioned between the Parties. Recommendations to Parties must therefore not only indicate what must be done, but also how it must be done.

### **1.3 The ORASECOM UNDP-GEF Project to support the Strategic Action Programme Implementation**

ORASECOM, with support from UNDP, managed to secure further financial support from GEF to implement selected priority activities of SAP. The UNDP-GEF project titled, Support to the Orange-Senqu River Strategic Action Programme Implementation, will be implemented by UNDP and executed by ORASECOM in the next 5 years to support ORASECOM and its member states to implement SAP. The project has been built on the Transboundary Diagnostic Analysis (TDA) which has carried out the necessary causal chain analyses in order to identify the transboundary threats to the sustainable development and management of the water resources of the Orange-Senqu Basin. Having identified and understood the threats and their causes, it was possible to identify the barriers which are preventing the removal of these threats, so that sustainable development/management of the basins water and related resources can proceed.

Through the TDA and SAP development process supported by the previous UNDP-GEF intervention and other cooperating partners, basin states have identified key water resources quality issues in the Orange-Senqu River system as nutrient enrichment, primarily linked to increased phosphorus and nitrogen concentrations; increased salinity from acid mine drainage and irrigation return flows; microbial contamination from urban settlements and poorly operated sewage treatment works; and changes in sediment load. In addition, radionuclides, heavy metals and persistent organic pollutants, while not currently posing a basin-wide risk, do show high concentrations in certain localised areas and require increased monitoring.

The overall objective of the SAP Implementation project is the strengthening of joint management capacity for implementation of the basin-wide IWRM Plan and demonstrating environmental and socioeconomic benefits of ecosystem-based approach to water resources management through the implementation of SAP priority actions in the Orange-Senqu River basin.

The project is supporting ORASECOM in implement measures to reduce stress on water resources quality through the development of a basin-wide water resource quality monitoring system through:

#### **a) Establishing a Basin-wide water resources quality monitoring system.**

There is a need to maintain and harmonise different monitoring systems to provide information on different aspects of water resources quality. The basin-wide Orange-Senqu monitoring system will largely be designed around the current monitoring sites, and data to be collected will largely be determined by the needs of the end users. The emphasis on developing the basin-wide monitoring system is on harmonising and integrating the existing national monitoring systems and national efforts of the basin states, filling data gaps where they exist, developing data exchange and management mechanisms and developing basin-

wide management response mechanisms acting on the results/analysis generated by the basin-wide monitoring system. Data exchange and sharing activities will support the production of tangible basin-wide output, such as state-of-art water quality yearbooks.

To pilot the basin-wide management response capacity of the basin-wide monitoring system, the project will support the ORASECOM and basin states to take collective/joint actions to alleviate pollution problems at selected pollution hotspots. Exact nature of the management response, collective/joint actions to be taken and indicators to measure the effectiveness of such action all depend on the nature and characteristics of the identified hotspots.

The project will also build linkages with the other ongoing initiatives such as the demonstration project on water quality monitoring on the Mohokare/ Caledon River catchment.

### **b) Development of Basin-wide water resources quality guidelines and monitoring systems**

It is important that these monitoring systems are maintained at a high level of reliability. The support of each country over the long term is critical for sustainability. For this reason, it is proposed that a Memorandum of Understanding (MoU) or other suitable form of agreement/commitment will be put in place between the four countries (to be facilitated by ORASECOM) which clearly states the expectations and obligations of each party and ORASECOM as a whole.

### **c) Periodic water resources quality monitoring and data sharing carried out and water quality yearbooks produced**

The MoU mentioned above should include all the necessary details on type, format, and frequency of data exchange as well as Quality Assurance/Quality Control (QA/QC) protocols to be observed.

## **2. Objective of the Assignment**

ORASECOM wishes to procure the services of a Supplier to undertake the following.

- Supply and install the water quality monitoring and laboratory equipment as stipulated in Appendix A.
- Train the identified officers from the State Parties (Lesotho) on the operation and maintenance on the supplied equipment to ensure they are able to utilise the equipment to the best of its capabilities;
- Commission all the installed equipment to ensure they meet all the set standards and can perform optimally under the prevailing conditions.

### 3. Invitation to Tender

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- A supplies contract for Supply, Installation, Training and Commissioning of Water Quality Monitoring and Laboratory Equipment for ORASECOM Member State of Lesotho.
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- Tender offers are invited for **Supply, Installation, Training and Commissioning of Water Quality Monitoring and Laboratory Equipment for ORASECOM Member State of Lesotho.**
  - The Procuring Entity is: Orange – Senqu River Commission (ORASECOM), 269 Von Willich Avenue, Block A Corporate 66 Park, Centurion, South Africa
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- Procurement Method is: Open Tender
  - Tenderers must, to be considered for the award of the contract, be registered with the relevant mandated institutions in the countries where they are domiciled and have the required codes to supply water quality monitoring and laboratory equipment.
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- The tender is open however preference will be given to companies domiciled in the ORASECOM member states of Botswana, Lesotho, Namibia and South Africa.
  - Preference will also be applied to those companies that are joint venture partners with ORASECOM member states companies.
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- The tender can be downloaded from the ORASECOM Website ([www.orasecom.org](http://www.orasecom.org)) or requested through email to [mike.ramaano@orasecom.org](mailto:mike.ramaano@orasecom.org) with a copy to [mike.ramaano@gmail.com](mailto:mike.ramaano@gmail.com)
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- The tender document is free for all interested companies
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- Queries or clarifications relating to the tender documents may be addressed in writing no later than 06 January 2023 to Mr. Michael Ramaano, [mike.ramaano@orasecom.org](mailto:mike.ramaano@orasecom.org) with a copy to [Viviane.kinyaga@orasecom.org](mailto:Viviane.kinyaga@orasecom.org) , Tel No. +27 12 663 6826, Mobile No. +27 84 305 1002
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- The closing date and time for receipt of tender offers is 20<sup>th</sup> January 2023 at 1200 hours (South African time).
  - Late tender offers will not be accepted.
  - The Bid Submission Method is: *An email submission to [mike.ramaano@orasecom.org](mailto:mike.ramaano@orasecom.org) with a copy to [mike.ramaano@gmail.com](mailto:mike.ramaano@gmail.com) and [Viviane.kinyaga@orasecom.org](mailto:Viviane.kinyaga@orasecom.org)*
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**ORASECOM Standardised Conditions of Tender for Supplies apply to this procurement, for which all the applicable Tender Data is contained in the tender document.**

{Notwithstanding anything in the foregoing, the ORASECOM is not bound to accept the lowest or any tender offer.}

## 4. Tender Data

The conditions of tender are the Standardised Conditions of Tender as per the ORASECOM Procurement Process.

The Standardised Conditions of Tender make several references to the Tender Data for details that apply specifically to this tender. The Tender Data shall have precedence in the interpretation of any ambiguity or inconsistency between it and the Standardised Conditions of Tender.

- i. The Procuring Entity is: Orange -Senqu River Commission (ORASECOM)
- ii. The Procurement Requirements are: Supply, Installation, Training and Commissioning of Water Quality Monitoring and Laboratory Equipment.
- iii. The Procurement Method is: Open International
- iv. The Bid Submission Method is: Email Submission to the stipulated email addresses.
- v. The Evaluation Method is: Least Cost Selection- Supplies Evaluation Method
- vi. The eligibility criteria for tenderers are:
  - a. Companies that are registered with the national entities in their countries of origin to supply Laboratory Equipment, spares and accessories.
  - b. Submit Tax registration and certificate indicating that the company is up to-date with its tax responsibilities. In case of a Joint Ventures this is required from all partners
- vii. Clarification of the tender documents must be received by the Procuring Entity no later than 1700hrs (South African time) on 06<sup>th</sup> January 2023.
- viii. The prices and rates are to be stated in South African Rands or United States Dollars.
- ix. Alternative Tender Offers are invited: No
- x. The closing time for submission of tender offers is: 1200hrs on 20th January 2023, SA time. No late submissions will be accepted.
- xi. Telephonic or facsimile tender offers will not be accepted.
- xii. The tender validity period is 120 days

- xiii. The Evaluation Method is: Least Cost Selection- Supplies Evaluation Method

## 4.1 Compliance, Technical and Financial Evaluation

In evaluating the tender, the procuring will follow a three (3) stage process starting with the Compliance and followed by Technical and finally the Financial evaluation. Tenders that do not meet the set criteria at one stage, will not be evaluated for the other stages.

N.B. The Stage Three – Technical includes the technical specifications and number of units to be procured

### a. Stage One - Compliance

The Tenderer shall furnish the following documentary evidence to demonstrate that it meets the compliance criteria:

- (i) Companies that are registered with the national entities in their countries of origin to supply Laboratory Equipment, spares and accessories. The registration will be confirmed with the relevant authority.
- (ii) Submit Tax registration and certificate indicating that the company is up to-date with its tax responsibilities. In case of a Joint Ventures this is required from all partners
- (iii) completed and signed form of Offer and Acceptance
- (iv) Signed certificate of authority of signatory

Bidders who fail to submit the above-mentioned documents will be disqualified.

### b. Stage Two – Technical Compliance

#### b.1 Water quality monitoring Datalogger Specification

##### ***1. Groundwater Water quality with GPRS telemetry (10 Units required)***

<b>Sensor module</b> - 3 Sensors plus pressure and temperature plus ext. sensors	
Relative pressure sensor	0 ... 10 m; 0 ... 20 m; 0 ... 50 m; 0 ... 100 m water level
Absolute pressure sensor	800 - 2,100 mbar; 800 - 6,100 mbar; 800 - 11,100 mbar
Temperature sensor	0 °C ... 50 °C; resolution: 0.04 °C
Conductivity sensor	0 0.2/2/20/500 mS/cm; resolution up to 0.1 µS/cm
pH	1 ... 14, resolution ΔpH = 0.01
Redox potential	-2,000 ... +2,000 mV; resolution 1 mV
pH/Redox – combination sensor	pH 1 ... 14; redox -2,000 ... +2,000 mV
DO [O <sub>2</sub> ] – luminescence	0 ... 40 mg/l O <sub>2</sub> ; resolution 0.02 mg/l O <sub>2</sub>
Ion selective sensors	Chloride, nitrate, ammonia and bromide

External sensors	Turbidity: chlorophyll – to be connected by separate cable
Dimensions	Measurement probe: diameter: 48 mm; length: 600 mm
Material with medium contact	Stainless steel; POM (Polyoxymethylene), PUR (Polyurethan), EPDM (Etylen-Propylen-Dien rubber), NBR, PE plus sensor materials
Probe cable	Cable sheath PUR or PE
Operating temperature range	0 °C ... 50 °C SENSODive; data logger -25 °C ... +70 °C
<b>Data logger:</b>	
Telemetry	GSM/ GPRS modem, 900 MHz, 1,800 MHz, GSM: 800, 850, 1,900 MHz, option 3G, option LTE or 4G NB-IoT modem  Optional integrated Iridium modem for the Iridium satellite system with the widest possible complete worldwide coverage. Iridium Modem 1616...1626,5 MHz; No activation via SIM card, but activation via IMEI registration at the provider.  Option: LoRa® or LoRaWAN® – 868 MHz
Data security	Option: TLS - client-server certificate
Optional: air pressure sensor	Optional: air pressure sensor
Option: Bluetooth	Bluetooth LE for wireless basic parameterization and data display only with 3G-modem or LTE-modem
Power supply	2 - 4 lithium batteries– 13/26Ah or 4 alkaline Baby 1.5 V (Duracell) or Li-Ion accumulators, 5.2 Ah, definition with offer
Dimensions	Diameter 48 mm, length 700 mm
Protection degree	Option 1 – with air pressure membrane: IP 65 Option 2 – without capillary: IP 68 Option 3 – without capillary, with air pressure sensor: IP 68
Optional: external antenna	Mountable with the same protection degree

## ***ii. Surface Water quality with GPRS telemetry (10 units required)***

<b>Sensor module - 6 Sensors plus pressure and temperature plus ext. sensors</b>	
Absolute pressure sensor	800 - 2,100 mbar; 800 - 6,100 mbar; 800 - 11,100 mbar
Temperature sensor	0 °C ... 50 °C; resolution: 0.04 °C
Conductivity sensor	0...0.2/2/20/500 mS/cm; resolution up to 0.1 µS/cm
pH	1 ... 14, resolution ΔpH = 0.01
Redox potential	-2,000 ... +2,000 mV; resolution 1 mV
pH/Redox – combination sensor	pH 1 ... 14; redox –2,000 ... +2,000 mV
DO [O <sub>2</sub> ] – luminescence	0 ... 40 mg/l O <sub>2</sub> ; resolution 0.02 mg/l O <sub>2</sub>
Turbidity	0 - 25/125/500/2500 NTU
Ion selective sensors	Chloride, nitrate, ammonia and bromide
External sensors	Chlorophyll – to be connected by separate cable
<b>Data logger:</b>	
Telemetry	GSM/ GPRS modem, 900 MHz, 1,800 MHz, GSM: 800, 850, 1,900 MHz, option 3G, option LTE or 4G NB-IoT modem  Optional integrated Iridium modem for the Iridium satellite system with the widest possible complete worldwide coverage. Iridium Modem 1616...1626,5 MHz; No activation via SIM card, but activation via IMEI registration at the provider.  Option: LoRa® or LoRaWAN® – 868 MHz
Data security	Option: TLS - client-server certificate
Optional: air pressure sensor	Optional: air pressure sensor
Option: Bluetooth	Bluetooth LE for wireless basic parameterization and data display only with 3G-



	modem or LTE-modem
Power supply	Option 1 accumulator: 12 V, 6,5 Ah for data logger and sensor useable Option 2 Solar: Additional solar charger mounted in the aluminum housing
Dimensions	Diameter 48 mm, length 700 mm
Protection degree	Option 1 – with air pressure membrane: IP 65 Option 2 – without capillary: IP 68 Option 3 – without capillary, with air pressure sensor: IP 68
Optional: external antenna	Mountable with the same protection degree

#### Laboratory Analysis specifications

- Microbiological
- Sediment load scan

### **b.2 Laminar Flow Hood Specifications: 1 unit required**

- General Construction: Polypropylene & Powder Coated Steel Structure
- Side Panels: Transparent Non-Dissipative PVC or Static-Dissipative PVC windows
- Prefilters: Washable Polyurethane Foam
- Final Filters: HEPA: 99.99% efficient @ 0.3µm particles or ULPA: 99.999% efficient @ 0.12µm particles
- Fan Motor: Direct drive, forward curve, centrifugal-type with sealed bearings; rated for continuous duty; furnished with overload protection and a two-speed switch. Rated .25 HP @ low speed; .333 HP @ high speed (2' x 4' models)
- Average airflow velocity: 90 feet/minutes (fpm)
- Air Flow: 4-Foot Models: High Speed 580 CFM or 490 CFM @ 90fpm; 3- & 6-Foot Models: High Speed 540 CFM or 440 CFM @ 90fpm
- Sound level: 50 dBA, measured no more than 30" from filter face @ 90 FPM
- Electrical: 110VAC, 50/60Hz (or 220VAC, 50 Hz). Meets the requirements of the National Electrical Code and applicable local codes. All components UL listed and CE marked
- Performance: Particle count exceeds Class 100 requirements.

### **b.3 White Diamond Series Refrigerator & Freezer Combination with Auto Defrost Freezer: (1 unit required)**

- 12 Cu. Ft. capacity (10.5 Ref./1.3 Freezer)
- Two exterior swing doors (glass door refrigerator/solid door freezer), right hinged, not reversible
- Microprocessor temperature controller, refrigerator and freezer
- Digital temperature display with sample simulated probe, refrigerator and freezer
- Adjustable operating temperature range: Refrigerator: 1°C – 10°C; Freezer: -15°C – -25°C
- Auto defrost cycle every 6 hours, max air temp in empty freezer: +4.34°C; max air temp in loaded freezer: -2.89°C.

Max sample temp in empty freezer: -4.76°C; max sample temp in loaded freezer: -9.58°C.

- Audible and visual high and low temperature alarms, refrigerator and freezer
- Remote alarm contacts, refrigerator and freezer
- Six adjustable shelves with guard rail on back to prevent product from being pushed against back wall, Refrigerator
- Two adjustable shelves with guard rail on back to prevent product from being pushed against back wall, Freezer
- Bottom footed shelf to allow air circulation, Refrigerator and Freezer
- Keyed door locks; Leveling legs; Stacking kit
- Two probe access ports (3/8"); one, refrigerator/one, freezer
- HFC-free refrigerant (R600a), foam insulation and packaging

#### **b.4 Groundwater level monitoring Datalogger Specification (10 units required)**

Water level, temperature, and conductivity logger with GPRS telemetry

<b>CTD - sensor</b>	
Relative pressure sensor	0 ... 10 m; 0 ... 20 m; 0 ... 50 m; 0 ... 100 m water level
Accuracy	0.05 % FS at 10...40°C; resolution 0.002 % FS
Temperature sensor	0 °C ... 50°C; resolution 0.04 °C
Conductivity sensor / graphit electrode	0- 0,2/2/20/200 mS/cm; resolution up to 0,1 µS/cm - four electrode system
Salinity and TDS	Calculated
Probe cable	Material PUR with air pressure capillary
Dimensions	Diameter probe: 22 mm; length: 340 mm
Material with medium contact	Stainless steel; POM (Polyoxymethylene), PUR (Polyurethan), EPDM (Etylen-Propylen-Dien rubber), NBR, PE plus sensor materials
<b>Data logger and telemetry unit</b>	
Dimensions:	Diameter: 48 mm, length: 700 mm
Protection degree:	Option 1 – with air pressure membrane: IP 65
Temperature range:	-25 °C ... 70 °C
Power supply:	4 batteries, type Duracell Alkaline – up to 8 Ah
Wireless data transfer:	4 band GSM/ GPRS modem, 900 MHz, 1,800 MHz, GSM: 800, 1,900 MHz + 4G (LTE) or 4G (NB-IoT), or optional integrated Iridium modem for the Iridium satellite system with the widest possible complete worldwide coverage. Iridium Modem 1616...1626,5 MHz; No activation via SIM card, but activation via IMEI registration at the provider.
Optional: external antenna	Mountable with the same protection degree

#### **b.5 Surface water level monitoring Datalogger Specification (10 Units required)**

i. Water level and temperature logger with GPRS telemetry

<b>Level and temperature sensor</b>	
Relative pressure sensor	0 ... 10 m; 0 ... 20 m; 0 ... 50 m; 0 ... 100 m water level

Accuracy	0.05 % FS at 10...40°C; resolution 0.002 % FS
Temperature sensor	0 °C ... 50°C; resolution 0.04 °C
Probe cable	Material PUR with air pressure capillary
Dimensions	Diameter probe: 22 mm
Material with medium contact	Stainless steel; POM (Polyoxymethylene), PUR (Polyurethan), EPDM (Etylen-Propylen-Dien rubber), NBR, PE plus sensor materials
<b>Data logger and telemetry unit</b>	
Dimensions:	Diameter: 48 mm, length: 700 mm
Protection degree:	Option 1 – with air pressure membrane: IP 65
Temperature range:	-25 °C ... 70 °C
Power supply:	4 batteries, type Duracell Alkaline – up to 8 Ah
Wireless data transfer:	4 band GSM/ GPRS modem, 900 MHz, 1,800 MHz, GSM: 800, 1,900 MHz + 4G (LTE) or 4G (NB-IoT), or optional integrated Iridium modem for the Iridium satellite system with the widest possible complete worldwide coverage. Iridium Modem 1616...1626,5 MHz; No activation via SIM card, but activation via IMEI registration at the provider.
Optional: external antenna	Mountable with the same protection degree

## ii. Steel Gauge Plates specification (x52)

52 units required as per the breakdown below

Item	Description	Unit (m)	Quantity
1	1 <sup>st</sup> range	0 – 1.5	10
2	2 <sup>nd</sup> range	1.5 – 3	10
3	3 <sup>rd</sup> range	3 – 4.5	10
4	4 <sup>th</sup> range	4.5 – 6	10
5	5 <sup>th</sup> range	6 – 7.5	10
6	6 <sup>th</sup> range	7.5 – 9	2
Total number			52

## iii. Installation and Training

Dataloggers should include the following as minimum.

- USB comms cable for datalogger programming
- Zednet cloud application for real-time monitoring ( $\geq$  3years licenses)
- SIM cards and Data plan for the GSM network
- Manufacturer Warranty period (in years)
- Equipment Installation and Training

### b.6 Protection of data loggers and sensors against theft and vandalism

It is essential that the installation of both surface and groundwater data loggers be protected against theft and vandalism. Therefore, a proposal should be made for the protection of the sensor unit and the data logger. Also, important to outline how the whole system once protected will function with regards to monitoring by the relevant personnel.

### b.7 Chemicals

Supply all the necessary high purity chemicals and reagents for commissioning and training during the installation phase of the instruments.

#### **b.8 Validity for the supply of service parts**

Provide a confirmatory assurance and commitment letter that production of the instrument parts shall be in force for a minimum of 10 years from date of tender submission i.e. the instrument parts should be available in the market for use in the service and maintenance for the duration of at least ten years from date of tender closing.

#### **b.9 Commitment for after - sales support**

Provide a confirmatory assurance for the availability of after sales support with turnaround time of not less than 48 hours for at least 2years from tender submission date.

#### **b.10 Technical Evaluation Scoring**

A technical evaluation shall be made to determine the technical compliance with the specifications or scope of supplies in the bid document.

Provide/attach a brochure /catalogue. The provided document should contain detailed specifications, brand names from the manufacturer.

The following shall be evaluated for each item tendered for;

- Compliance with item's technical specifications as outlined in technical specification. A tick (✓) is given for compliance with each specification and (x) for non-compliance.
- Affirmation of the tick should be clearly outlined in the brochures, catalogues or technical data sheet(s).
- A bidder who gets ticks on ALL specifications would be recommended for cost evaluation.
- Only bids that have passed this stage shall undergo financial evaluation

#### **c. Stage 3 - Cost Evaluation Stage**

Cost evaluation shall be conducted by reviewing the following:

- Correct arithmetical errors and convert bids to a common currency;
- Compare prices (inclusive of VAT) of the technically compliant bidders
- Assess reasonableness of quoted price based on market price

#### **c.1 Basis for Award**

The lowest bidder with reasonable price, who has fully complied and met both the legal and technical requirements specified in the tender document, will be recommended for award.

## **c.2 Award Criteria**

The tender will only be awarded in full. Bidders should quote for the whole package to be considered for award. One (1) bidder who complies with all the specifications will be awarded the whole tender.

Bidders are required to indicate information in their bids which they consider confidential and whose disclosure shall be prejudicial to their interest. Failure to identify the information referred to will render such information subject to declassification after two years following the award of tender.

NOTE: This is not a disqualifying factor and shall not be used for evaluation.

## **Appendix 1:**

### **ORASECOM STANDARDIZED CONDITIONS OF TENDER FOR SUPPLIES**

#### **1 General**

##### **Actions**

1.1 The Procuring Entity, ORASECOM, and each tenderer submitting a tender offer shall comply with these Conditions of Tender and any applicable laws and regulations. The Procurement Requirements, Procurement Method, Bid Submission Method and Evaluation Method are identified in the **Tender Data**. The Procuring Entity shall, in addition, act in a manner that is fair, equitable and transparent.

##### **Communication & Procuring Entity's agent**

1.2 Each communication between the Procuring Entity and a tenderer shall be in writing in English. The Procuring Entity will not take any responsibility for non-receipt of communications from or by a tenderer. The name and contact details of the Procuring Entity's agent are stated in the **Tender Data**.

##### **The Procuring Entity's rights to accept or reject any tender offer**

1.3 The Procuring Entity may accept or reject any variation, deviation, tender offer and may cancel the tender process and reject all tender offers at any time prior to the formation of a contract. The Procuring Entity will not accept or incur any liability to a tenderer for such cancellation and rejection but will give reasons for the action.

1.4 After the cancellation of a tender process or the rejection of all tender offers the Procuring Entity may abandon the proposed procurement and have it performed in another manner.

#### **2 Tenderer's obligations**

The tenderer shall comply with the following obligations:

##### **Eligibility**

2.1 Submit a tender offer only if the tenderer complies with the eligibility criteria stated in the **Tender Data** and the tenderer is not under any restriction to do business with the ORASECOM including the four State Parties of Botswana, Lesotho, Namibia and South Africa.

##### **Cost of tendering**

2.2 Accept that the Procuring Entity will not compensate the tenderer for any costs incurred in the preparation and submission of a tender offer.

### **Check documents**

2.3 Check the tender documents on receipt, including pages within them, and notify the Procuring Entity of any discrepancy or omission.

### **Confidentiality & Copyright of documents**

2.4 Treat as confidential all matters arising in connection with the tender. Use and copy the documents issued by the Procuring Entity only for the purpose of preparing and submitting a tender offer in response to the invitation.

### **Standardised specifications and other publications**

2.5 Obtain, as necessary for submitting a tender offer, copies of the latest versions of standardised specifications, conditions of contract and other publications, which are not attached but which are incorporated into the tender documents by reference.

### **Acknowledge addenda**

2.6 Acknowledge receipt of addenda to the tender documents, which the Procuring Entity may issue, and if necessary apply for an extension to the closing time stated in *clause 4 (vii) and (x) of the Tender Data*, in order to take the addenda into account.

### **Site visit and / or clarification meeting**

2.7 Attend a site visit and / or clarification meeting at which tenderers may familiarize themselves with the supplies (and location etc.) and raise questions. Details of the meeting(s) are stated in the **Tender Data**.

### **Seek clarification**

2.8 Request clarification of the tender documents, if necessary, by notifying the Procuring Entity by at least the number of working days stated in the **Tender Data** before the closing date and time stated in *clause 4 vii of the Tender Data*.

### **Insurance**

2.9 Be aware that the extent of insurance to be provided by the Procuring Entity (if any) may not be for the full cover required in terms of the Contract. The tenderer is advised to seek qualified advice regarding insurance.

### **Pricing the tender offer**

2.10 Include in the rates, prices, and the tendered total of the prices (if any) all duties, taxes (except VAT), and other levies payable by the successful tenderer, such duties, taxes and levies.

2.11 Show Value Added Tax (VAT) payable by the Procuring Entity separately as an addition to the tendered total of the prices.

2.12 Provide rates and prices that are fixed for the duration of the Contract and not subject to adjustment except as provided for in the Contract.

2.13 State the rates and prices in stipulated currency unless instructed otherwise in the **Tender Data**. The conditions of contract may provide for part payment in other currencies.

### **Alterations to documents**

2.14 Not make any alterations or additions to the tender documents, except to comply with instructions issued by the Procuring Entity, or necessary to correct errors made by the tenderer. All signatories to the tender offer shall initial all such alterations. Erasures and the use of masking fluid are prohibited.

### **Alternative tender offers**

2.15 If identified in the **Tender Data**, may submit alternative tender offers only if a main tender offer, strictly in accordance with all the requirements of the tender documents, is also submitted. The alternative tender offer is to be submitted with the main tender offer together with a schedule that compares the requirements of the tender documents with the alternative requirements the tenderer proposes.

2.16 Accept that an alternative tender offer may be based only on the criteria stated in the **Tender Data**.

### **Submitting a tender offer**

2.17 Submit a tender offer for providing the whole of the supplies identified in the Contract, unless stated otherwise in the **Tender Data**.

2.18 Return all Returnable Documents to the Procuring Entity after completing them in their entirety, either electronically (if they were issued in electronic format) or by writing in black ink.

### **Information & data to be completed in all respects**

2.19 Accept that tender offers, which do not provide all the data or information requested completely and, in the form, required, may be regarded by the Procuring Entity as non-responsive.

2.20 Submit the parts of the tender offer communicated on paper as an original plus the number of copies stated in the **Tender Data**, with an English translation of any documentation in a language other than English, and the parts communicated electronically in the same format as they were issued by the Procuring Entity.



2.21 Sign the original and all copies of the tender offer where indicated. The Procuring Entity will hold all authorised signatories liable on behalf of the tenderer. Signatories for tenderers proposing to contract as Joint Ventures shall state which of them is the lead partner whom the Procuring Entity shall hold liable for the purpose of the tender offer.

### **Closing date and time**

2.22 Ensure that the Procuring Entity receives the tender offer at the address specified in the *clause 4.x. of the Tender Data* not later than the closing date and time stated in the **Tender Data**. Proof of posting will not be accepted as proof of delivery. The Procuring Entity will **not** accept tender offers submitted by telephone or facsimile, unless stated otherwise in the **Tender Data**.

2.23 Accept that, if the Procuring Entity extends the closing date and time stated in *clause 4.x. of the Tender Data* for any reason, the requirements of these Conditions of Tender apply equally to the extended deadline.

### **Tender offer validity**

2.24 Hold the tender offer(s) valid for acceptance by the Procuring Entity at any time during the validity period stated in the **Tender Data** after the closing date and time stated in *clause 4.xii. of the Tender Data*.

2.25 If requested by the Procuring Entity, consider extending the validity period stated in *clause 4.xii of the Tender Data* for an agreed additional period. A Tenderer agreeing to the request will not be required or permitted to modify a tender.

### **Clarification of tender offer after submission**

2.26 Provide clarification of a tender offer in response to a request to do so from the Procuring Entity during the evaluation of tender offers. This may include providing a breakdown of rates or prices and correction of arithmetical errors. No change in the substance of the tender offer is sought, offered, or permitted except as required by the Procuring Entity to confirm the correction of arithmetical errors discovered during the evaluation of tenders. The total of the prices stated by the tenderer as corrected by the Procuring Entity with the concurrence of the tenderer, shall be binding upon the tenderer.

### **Provide other material**

2.27 Provide, on request by the Procuring Entity, any other material that has a bearing on the tender offer. Tenderer's response to such request shall be for verification purposes only and will not be considered for evaluation purposes, which is restricted to the submitted proposal. Should the tenderer not provide the material, or a satisfactory reason as to why it cannot be provided, by the date and time for submission stated in the Procuring Entity's request, the Procuring Entity may regard the tender offer as non-responsive.

**Submit securities, bonds, policies etc.**

2.28 If requested, submit for the Procuring Entity's acceptance before formation of the contract, all securities, bonds, guarantees, policies and certificates of insurance required in terms of the Contract.

2.29 Check the final draft of the contract provided by the Procuring Entity within the time available for the Procuring Entity to issue the contract.

**3 The Procuring Entity's undertakings**

The Procuring Entity undertakes to:

**Respond to clarification**

3.1 Respond to a request for clarification received up to the number of working days stated in *clause 4.vii. of the Tender Data* prior to the tender closing date.

**Issue Addenda**

3.2 If necessary, issue addenda that may amend or amplify the tender documents to each tenderer. If as a result of the addenda, a tenderer applies for an extension to the closing time stated in *clause 4.x. of the Tender Data*, the Procuring Entity may grant such extension and, will then notify it to all tenderers.

**Return late tender offers**

3.3 Tender offers submitted after the closing date and time of submission as stated in *clause 4.x. of the Tender Data* will not be accepted/evaluated. The tenderer will be notified of the time and date of when the tender was received and rejection message.

**Non-disclosure**

3.4 Shall not disclose to tenderers, or to any other persons not officially concerned with the procurement process including the evaluation stage, information relating to the procurement process in general, evaluation and comparison of tender offers, the final evaluation price, the ranking of tender offers or recommendations for the award of a contract. Disclosure of information related to the procurement process and tenders can be made available in accordance to tenderers and any interested individuals after the award recommendation of the contract to the successful tenderer has been made.

**Grounds for rejection & disqualification**

3.5 Determine whether there has been any effort by a tenderer to influence the processing of tender offers if it is reasonably established that the tenderer offered an inducement to or colluded with any person or other tenderer with the intent to influence the award of the contract. Upon such determination the matter shall be further referred for investigation to be carried out by the competent authority.

## **Clarification of Tender Offers**

3.6 Obtain clarification from a tenderer on any matter that could give rise to ambiguity in a contract arising from the tender offer.

## **Examination and Evaluation of Tender Offers**

3.7 Use the Least Cost Selection - Supplies evaluation method for examination and, if eligible, subsequent evaluation of tender offers comprising (a) Stage one- Preliminary Examination; (b) Stage Two- Technical Evaluation; and (c) Stage Three- Cost Evaluation. Thereafter to determine for each responsive tender offer its Comparative Offer.

## **Least Cost Selection- Supplies Evaluation Method**

### **Stage One - Preliminary Examination**

3.8 Conduct preliminary examination of tender offers before detailed evaluation, to determine:

- (a) Whether a tenderer is eligible, on the basis of having passed or failed the eligibility criteria for the tender identified in the *clause 4.vi. of the Tender Data*. Tenderers shall prove eligibility by submitting the documentary evidence stated in the **Tender Data**; and
- (b) The completeness in accordance with the Returnable Documents Annex to the tender document of a tender and its responsiveness to the terms of the tender document.

A tenderer that fails to meet the eligibility criteria and / or whose tender is found to be incomplete and / or non-responsive to the terms of the tender document shall be eliminated from further evaluation.

### **Test for responsiveness**

3.9 Classify a responsive tender as one that conforms to all the terms, conditions, and specifications of the tender documents identified in *clause 3.8 of the Conditions of Tender* without material deviation or qualification. A material deviation or qualification is one which, in the Procuring Entity's opinion, would:

- Detrimentially affect the scope, quality, or performance of the supplies identified in the Contract,
- Change the Procuring Entity's or the tenderer's risks and responsibilities under the Contract, or
- Affect the competitive position of other tenderers presenting responsive tenders, if it were to be rectified.

### **Non- responsive tender offers**

3.10 Reject a non-responsive tender offer, and not allow it to be subsequently made responsive by correction or withdrawal of the non-conforming deviation or reservation.

## **Stage Two-Technical Evaluation**

3.11 Only for tender offers that in accordance with *clause 3.8 of the Conditions of Tender* have been determined to (a) have been submitted by eligible tenderers; and (b) be complete and responsive tender offers, conduct a technical evaluation to determine technical compliance with the specifications listed in the tender document. Technically non-compliant tender offers shall be eliminated from further evaluation. The technical evaluation criteria are stated in the **Tender Data**.

## **Stage Three-Cost Evaluation**

3.12 Only for tender offers that in accordance with *clause 3.11 of the Conditions of Tender* have been determined to be technically compliant, conduct a cost evaluation to:

- (i) Perform price comparison in accordance with the pricing sheet, if any;
- (ii) Correct arithmetical errors;
- (iii) Where applicable, convert tender offers to a common currency; and
- (iv) Adjust pricing to compensate for deviations and errors.

### **Correct Arithmetical errors**

3.13 Check responsive tender offers for arithmetical errors, correcting them in the following manner:

- Where there is a discrepancy between the amounts in figures and in words, the amount in words shall govern.
- If a schedule of quantities or schedule of prices applies and there is an error in the line-item total resulting from the product of the unit price and the quantity, the unit price shall govern and the total shall be corrected.
- Where there is an error in the total of the prices, either as a result of other corrections required by this checking process or in the tenderer's addition of prices, the total of the prices, if any, will be corrected. The corrected tender price will be communicated to the tenderer. The tenderer may not change the corrected tender price.

3.14 Reject a tender offer if the tenderer does not accept the correction of the arithmetical errors in the manner described above.

### **Convert tender prices to a common currency**

3.15 Where applicable and for evaluation and comparison purposes only, convert tender prices in multiple currencies to United States Dollars at the UNDP ruling exchange rate at the tender closing date and time stated in *clause 4.x. of the Tender Data*.

### **Adjustments to the corrected tendered price to compensate for priced deviations, errors and oversights**

3.16 Adjust the corrected tender price that, where applicable, has been converted into a common currency. Such adjustments are to consider;

(a) minor deviations that do not materially alter or depart from the characteristics, terms, conditions and other requirements set forth in the tender documents.

(b) errors or oversights that are capable of being corrected without touching on the substance of the tender offer and will not constitute a material deviation as defined by Clause 3.9. Any minor deviations shall be quantified to the extent possible and appropriately taken account of in the evaluation and comparison of tender offers.

### **Insurance provided by the Procuring Entity**

3.17 If requested by the proposed successful tenderer, submit for the tenderer's acceptance the policies and / or certificates of insurance which the conditions of contract identified in the Contract Data, require the Procuring Entity to provide.

### **Acceptance of tender**

3.18 Notify the successful tenderer of the Procuring Entity's acceptance of his tender offer by completing and returning one copy of the Form of Offer and Acceptance before the expiry of the validity period stated in the Tender Data or agreed additional period. Providing the Form of Offer and Acceptance does not contain any qualifying statements, it will constitute the formation of a contract between the Procuring Entity and the successful tenderer as described in the Form of Offer and Acceptance.

### **Notice to unsuccessful tenderers**

3.19 After the successful tenderer has acknowledged the Procuring Entity's notice of acceptance, notify other tenderers that their tender offers have not been successful.

### **Prepare contract documents**

3.20 If necessary, revise documents that will form part of the contract and were issued by the Procuring Entity as part of the tender documents to take account of:

- addenda issued during the tender period,
- inclusion of some of the Returnable Documents,
- other revisions agreed between the Procuring Entity and the successful tenderer, and
- the Schedule of Deviations attached to the Form of Offer and Acceptance.

### **Issue final contract**

3.21 Prepare and issue the final draft of contract documents to the successful tenderer for acceptance as soon as possible after the date of the Procuring Entity's

ty's execution of the Form of Offer and Acceptance (including the Schedule of Deviations). Only those documents that the Conditions of Tender require the tenderer to submit, after acceptance by the Procuring Entity, will be included.

**Provide copies of the contracts**

3.22 Provide to the successful tenderer the number of copies stated in the **Tender Data** of the signed copy of the contract as soon as possible after completion and signing of the Form of Offer and Acceptance.

## **Annex 2: List of Tender Returnable Documents**

The tenderer must complete the following returnable documents:

a. Returnable Documents required for tender evaluation purposes

i.	CERTIFICATE FOR AUTHORITY OF SIGNATORY
ii.	Experience of tenderer
iii.	DECLARATION FORM FOR TENDERING PURPOSES
iv.	CURRICULUM VITAE OF KEY PERSONNEL
v.	MANUFACTURER'S AUTHORIZATION [only where required for complex high value supplies]
vi.	DOCUMENTARY EVIDENCE THAT SUPPLIES OFFERED MEET USAGE REQUIREMENTS
vii	PROVISION OF SAMPLES FORM
vii	Form of offer and acceptance

b. Other documents required for tender evaluation purposes

- Valid Tax Clearance Certificate or exemption thereof issued by relevant authorities.
- Valid Company Registration Certificates

c. Other returnable documents that will be incorporated into the contract

**d. Price schedules**



## Tender Returnable Documents

### Tender Schedule, Certificate of Authority of Signatory

Indicate the status of the tenderer by ticking the appropriate box hereunder. The tenderer must complete the certificate set out below for the relevant category.

A COMPANY	B PARTNERSHIP	C JOINT VENTURE	D SOLE PROPRIETOR	E OTHER

#### A. Certificate for company

I, \_\_\_\_\_, authorised representative of \_\_\_\_\_, hereby confirm that by resolution of the board Mr/Ms \_\_\_\_\_, acting in the capacity of \_\_\_\_\_, was authorised to sign all documents in connection with this tender offer and any contract resulting from it on behalf of the company.

#### B. Certificate for partnership

We, the undersigned, being the key partners in the business trading as \_\_\_\_\_ hereby authorise Mr/Ms \_\_\_\_\_, acting in the capacity of \_\_\_\_\_, to sign all documents in connection with the tender offer for Contract \_\_\_\_\_ and any contract resulting from it on our behalf.

NAME	ADDRESS	SIGNATURE	DATE

NOTE: This certificate is to be completed and signed by all the partners. Attach additional pages if more space is required.

Furthermore we attach to this Schedule a copy of the partnership agreement which incorporates a statement that all partners are liable jointly and severally for the execution of the contract and that the lead partner is authorised to incur liabilities, receive instructions and payments and be responsible for the entire execution of the contract for and on behalf of any and all partners.

### **C. Certificate for Joint Venture**

We, the undersigned, are submitting this tender offer in Joint Venture and hereby authorise Mr/Ms \_\_\_\_\_, an authorised signatory of the company \_\_\_\_\_, acting in the capacity of lead partner, to sign all documents in connection with the tender offer for Contract \_\_\_\_\_ and any contract resulting from it on our behalf.

This authorisation is evidenced by the attached power of attorney signed by legally authorised signatories of all the partners to the Joint Venture.

Furthermore we attach to this Schedule a copy of the joint venture agreement which incorporates a statement that all partners are liable jointly and severally for the execution of the contract and that the lead partner is authorised to incur liabilities, receive instructions and payments and be responsible for the entire execution of the contract for and on behalf of any and all the partners.

<b>NAME OF FIRM</b>	<b>ADDRESS</b>	<b>AUTHORISING SIGNATURE, NAME &amp; CAPACITY</b>
<b>Lead partner</b>		

**D. Certificate for sole proprietor.**

I, \_\_\_\_\_, hereby confirm that I am the sole owner

of the business trading as \_\_\_\_\_.

**E. Certificate for other.**

I, \_\_\_\_\_, hereby confirm that I am \_\_\_\_\_

of the business trading as \_\_\_\_\_

## Tender Returnable Document

### DECLARATION FORM FOR TENDERING PURPOSES

Declaration to establish that Directors, shareholders, partners, members have not participated through any other bid for the same tender.

#### PART A

I, \_\_\_\_\_ (full name), in my capacity as..... (state position in Entity) hereby declare that on my behalf, and on behalf of the owners, partners / directors/ shareholders /administrators and/or Other (Please specify) .....

of:

.....  
..... (Name of Entity)

of:

.....  
.....

..... (Post-al/physical address)

that, in connection with the enclosed tender,

All information contained herein is true and not misleading, and it is to the best of my knowledge factual and binding on the Entity and/or its Representatives. I state that the (State Name of Entity) ..... and/or its representatives confirm that they have not, through other entities, participated in the same tender and offer the same products in response to the same items.

NOTE THAT: In the case of competing franchises, the franchises may bid for the same item but with different products. Item means the commodity required by the procuring entity indicated in the tender. Product means the commodity offered by the bidder.

I declare and confirm that the Entity and/or its Representatives have in fact not participated in the same tender and offered the same products in response to the same items, through any other registered company or other entity. I hereby provide a current list of Directors/ Administrators/ Partners/ Members and/or Shareholders for the Company/Partnership/ Society/Joint Venture/ Private Foundation/Statutory Body and/or other (Please specify) .....

	<b>DIRECTORS/MEMBERS/ PARTNERS NAME and/OR Other (Please Specify).....</b>	<b>CAPACITY IN ENTITY</b>	<b>NATIONALITY</b>	<b>PERCENTAGE OF SHAREHOLDI NG</b>
1				
2				
3				
4				
5				
6				
7				

	<b>SHAREHOLDERS NAME</b>	<b>NATIONALITY</b>	<b>PERCENTAGE OF SHAREHOLDING</b>
<b>1</b>			
<b>2</b>			
<b>3</b>			
<b>4</b>			
<b>5</b>			
<b>6</b>			
<b>7</b>			

**If more space is required attach additional sheet.**

**Note that Public companies should state which stock exchange the company is listed under.**

I further acknowledge that should any of the directors, partners, and shareholders, members/administrators /(others please specify) be found to be associated in a similar or other manner in another company/entity, participating in this tender and offering the same products in response to the same items, this shall disqualify this Company/Partnership/ Society/Joint Venture/ Private Foundation/Statutory Body, and whichever company or other entity the said director/partner/shareholder/member and/or administrator is consequently involved in.

I further acknowledge that should the Company /Partnership/ Society/Joint Venture/ Private Foundation/ Statutory Body or any of its affiliates or subsidiaries be found to have participated in the same tender and offered the same products in response to the same items, the said Company/Partnership/ Society/Joint Venture/ Private Foundation/Statutory Body/(others please specify) and its affiliates and/or subsidiaries shall be disqualified.

The Company/Partnership/ *Society*/Joint Venture/ Private Foundation/ Statutory Body/(others please specify), through its agents, employees or directors has not illegally communicated with any member of the Orange – Senqu River Commission (ORASECOM) Secretariat, except as may be permitted in the relevant “instructions to tenderers” or by law.

The Company/Partnership/ *Society*/Joint Venture/ Private Foundation/Statutory Body/(others please specify), through its agents, employees, partners, members, administrators and/or directors has not paid or offered to pay any consideration, favour or promise to any member of the procuring department or any person employed by or associated with Orange – Senqu River Commission (ORASECOM) Secretariat or its Water Resources Quality Working Group.

I declare that this tender is submitted by us in our own right and we have not colluded in any way with any other /potential tenderer in the production and submission of this tender other than in the establishment of a joint venture or sub-contractor arrangement as fully and correctly declared in the tender.

I acknowledge that if after the award of this tender any of these declarations are found to be false then any contract(s) between ourselves and the procuring entity shall be terminated forthwith.

I confirm that our entity has undertaken not to collude to withdraw from a tender award, only for the reason that an unsuccessful bidder be awarded the tender. I confirm further that the entity has undertaken not to engage in frivolous complaints and litigation that frustrates project implementation.

SIGNED:..... NAME: .....

DATED:.....

.....  
Entity

Stamp

## **CONTRACT**

### **SUPPLY, INSTALLATION, TRAINING AND COMMISSIONING OF WATER QUALITY MONITORING AND LABORATORY EQUIPMENT FOR ORASECOM MEMBER STATES**

#### **CONTRACT**

##### **PART 1: AGREEMENTS AND CONTRACT DATA**

- A. Form of Offer and Acceptance
- B. General Conditions for Supplies Contract
- C. Contract Data

##### **PART 2: PRICING DATA**

- A. Pricing schedule

##### **PART 3: SCOPE OF WORK**

- A. Scope of Supply

## CONTRACT PART 1: AGREEMENTS AND CONTRACT DATA

### A. FORM OF OFFER AND ACCEPTANCE

#### Offer

The Procuring Entity being the Orange – Senqu River Commission (ORASECOM) has solicited offers to enter into a contract for the procurement of:

#### **SUPPLY, INSTALLATION, TRAINING AND COMMISSIONING OF WATER QUALITY MONITORING AND LABORATORY EQUIPMENT FOR ORASECOM MEMBER STATES**

The tenderer, identified in the signature block below, has examined the documents listed in the Tender Data and addenda thereto as listed in the Tender Schedules, and by submitting this Offer has accepted the Conditions of Tender.

By attaching the signature of a duly authorised representative to this part of this Form of Offer and Acceptance, the tenderer offers to perform all the obligations and liabilities of the Provider under the Contract including compliance with all its terms and conditions according to their true intent and meaning for an amount to be determined in accordance with the Conditions of Contract identified in the Contract Data.

The total of the amount tendered is _____ _____ __ South African Rands / US Dollars, (in words); ZAR/USD_____ _____ (in figures).
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This Offer, of which the tenderer has one original, may be accepted by the Procuring Entity by signing the form of Acceptance overleaf and returning one fully executed original of this document including the Schedule of Deviations (if any) to the tenderer before the end of the period of validity stated in the Tender Data, whereupon the tenderer becomes the party named as the Provider, in the Conditions of Contract identified in the Contract Data.



**For the tenderer:**

Signature(s) \_\_\_\_\_

Name(s) \_\_\_\_\_

Capacity \_\_\_\_\_

\_\_\_\_\_  
(Insert name and address of organisation)

Name &  
signature of  
witness \_\_\_\_\_

Date \_\_\_\_\_

**Acceptance**

By attaching the signature of a duly authorised representative to this part of this Form of Offer and Acceptance, the Procuring Entity accepts the tenderer's Offer. In consideration thereof, the Procuring Entity shall pay the Provider, the amount due in accordance with the Conditions of Contract identified in the Contract Data. Acceptance of the tenderer's Offer shall form an Agreement between the Procuring Entity and the tenderer upon the terms and conditions contained in this Agreement and in the Contract that is the subject of this Agreement.

The terms of the Contract, are contained in:

Part 1 Agreements and Contract Data, (which includes this Form of Offer and Acceptance)

Part 2 Pricing Data

Part 3 Scope of Supply

Part 1 Agreements and Contract Data, (which includes this Form of Offer and Acceptance)

The following Appendices: [**Note:** *If any of these Appendices are not used, the words "Not Used" should be inserted below next to the title of the Appendix and on the sheet attached hereto carrying the title of that Appendix.*]

Appendix A: Description of the Services

Appendix B: Schedule of Reporting Requirements

Appendix C: Key Personnel and Subcontractors

Appendix D: Breakdown of Contract Price in Foreign Currency

Part 2 Pricing Data

Part 3 Scope of Work

and drawings and documents (or parts thereof), which may be incorporated by reference into the above listed Parts.

Deviations from and amendments to the documents listed in the Tender Data and any addenda thereto listed in the Tender Schedules as well as any changes to the terms of the Offer agreed by the tenderer and the Procuring Entity during this process of Offer and Acceptance, are contained in the Schedule of Deviations attached to and forming part of this Form of Offer and Acceptance. No amendments to or deviations from said documents are valid unless contained in this Schedule, which must be signed by the duly authorised representative(s) for both parties.

The tenderer shall within one week of receiving a fully executed original of this Agreement, including the Schedule of Deviations (if any), contact the Procuring Entity's agent (whose details are given in the Contract Data) to arrange the delivery of any securities, bonds, guarantees, proof of insurance and any other documentation to be provided in terms of the Conditions of Contract identified in the Contract Data at, or just after, the date this Agreement comes into effect. Failure to fulfil any of these obligations in accordance with those terms shall constitute a repudiation of this Agreement.

Notwithstanding anything contained herein, this Agreement comes into effect on the date when the tenderer receives an emailed executed original of this document, including the Schedule of Deviations (if any). Unless the tenderer (now Provider) within five days of the date of such receipt notifies the Procuring Entity in writing of any reason why he cannot accept the contents of this Form of Offer and Acceptance, this Agreement shall constitute a binding contract between the Parties.

### **For the Procuring Entity**

Signature(s)

Name(s)

Capacity

*(Insert name and address of organisation)*

Name &  
signature of  
witness

Date

## Schedule of Deviations

Note:

1. The extent of deviations from the tender documents issued by the Procuring Entity prior to the tender closing date is limited to those permitted in terms of the Conditions of Tender.
2. In the event of conflict between the contents of this Schedule of Deviations and any other list or record of tender stage amendments or addenda, this Schedule shall take precedence.

### 1 Subject

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Details

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### 2 Subject

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Details

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### 3 Subject

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Details

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By affixing the signatures of the duly authorised representatives below, the Procuring Entity and the tenderer both agree to and accept the foregoing Schedule of Deviations as the only deviations from and amendments to the documents listed in the Tender Data and any addenda thereto listed in the Tender Schedules, as well as any changes to the terms of the Offer agreed by the tenderer and the Procuring Entity during this process of Offer and Acceptance.

It is expressly agreed that no information, documentation or communication not listed in the Schedule of Deviations shall have any meaning or effect in the contract between the parties arising from this Agreement.

**For the tenderer:**

Signature(s)

Name(s)

Capacity

*(Insert name and address of organisation)*

Name &  
signature of  
witness

Date

**For the Procuring Entity**

Signature(s)

Name(s)

Capacity

*(Insert name and address of organisation)*

Name &  
signature of  
witness

Date

## **GENERAL CONDITIONS OF SUPPLIES CONTRACT**

### **Definitions and interpretations**

- 1 In these conditions, except where the context otherwise requires:  
"Articles "means all Articles, plant, equipment, materials, items and service which the Provider is required under the Contract to supply:  
"Procuring Entity" means the Orange – Senqu River Commission (ORASECOM).

- 2 Any notice or other communication whatsoever which the Procuring Entity is required to give or make to the Provider in terms of the Contract shall, without prejudice to any other method of giving or making it, be sufficiently given or made if it is sent by email in a letter addressed to the Provider at the last known email address of the Provider and if the server does not given notification of email not being delivered , such notice or communication shall be deemed for the purpose of the Contract to have been given or made at the time at which the email was sent.

### **Law of Contract**

- 3 The Contract shall be considered as a Contract made in South Africa and subject to the laws of South Africa.

### **Transfer and assignment**

- 4 The Provider shall not give, bargain, sell, assign, sublet or otherwise dispose of the Contract or any part thereof or the benefit or advantage of the Contractor any part thereof without the previous consent in writing of the Procuring Entity.

### **Warranty**

- 5 The Provider warrants all Articles, material or services delivered to be free from defect material or workmanship and this warranty shall survive any inspection, delivery, acceptance or payment by the Procuring Entity of the Articles, material or services.

### **Insurance**

- 6 The Articles supplied under the Contract shall be fully insured against loss or damage incidental to manufacture or acquisition, transportation, storage, and delivery, in accordance with the applicable terms or in the manner specified in the Contract Data.

### **Quality**

- 7 The Articles delivered shall be of the quality, standard or specification described in the Contract and where samples form part of the Contract shall in all respects conform to sample.
- 8 All Articles, materials, workmanship, or services covered by this Contract shall be the subject of the Procuring Entity's inspection and test all times before, during or after manufacture. The Provider shall furnish without

extra charge all reasonable facilities and assistance for safe and convenient inspection or test required by appointed Inspectors. Such inspections may be carried out on the Provider's premises or at such other place as deemed appropriate by Inspectors. The Procuring Entity shall have the right to reject or, at its discretion, to require the correction or replacement of Articles, materials, workmanship, or services which are defective or do not conform to the specified requirements of this Contract.

All rejects shall be held at the Provider's risk and expense including all transportation and handling costs until returned to or collected by the Provider. All rejects shall be replaced or rectified and made good at the Provider's expense within the replacement period to the full satisfaction of the Inspectors and in conformity with the standards, specification or samples specified in this Contract.

### **Rejection for inferior quality**

- 9 Should the Articles or any portion of them offered or delivered by the Provider be reasonably rejected by the officer to whom the Provider has been ordered to deliver them, as not being equal to the quality, standard or specification Contracted for, or as being of a quality inferior to that of the samples where samples form part of the Contract, the Provider shall forthwith at his own expense remove the rejected Articles and shall within the replacement period replace them with alike quantity of Articles which meet the specified requirements.
- 10 In the event of the Provider failing to remove such rejected Articles within 1 day of notification of the rejection the Procuring Entity shall be at liberty to return them at the Provider's risk, the cost of carriage being recoverable from the Provider.
- 11 In the event of a rejection of any of the Articles whereby the Provider is aggrieved they may, within two working days of the receipt of notification of rejection and before such Articles have been removed, give the Procuring Entity notice of objection. It shall be a condition precedent to consideration by the Procuring Entity of the Provider's objection that the Provider shall have given notice of his objection within the said time. If the Provider gives notice as aforesaid the Articles shall not be removed until the Procuring Entity so directs.

### **Title to draw specifications**

- 12 The Procuring Entity shall at all times have title to all drawings and specifications furnished by the Procuring Entity to the Provider and intended solely for use in connection with this Contract. The Provider shall use such drawings and specifications only in connection with the Contract and shall not disclose such drawings and specifications to any person, firm or company other than those authorised by Procuring Entity or to

the Provider's employees, sub-Contractors or Procuring Entity Inspectors. The Provider shall upon the Procuring Entity's request or on completion of the Contract promptly return all drawings and specifications to the Procuring Entity.

### **Liquidated Damages for late delivery**

- 13 Should the Provider fail to supply any of the Articles on the date or dates or within the period or periods specified thereof or should fail to replace any rejected Articles as required by the Contract, the Provider shall be liable to pay the Procuring Entity a fixed sum for each day of late delivery as stated in the contract documents. The sum per day or week will be as specified in the Contract Data and will be applied up to a maximum sum of 10 % of the contract price. When a level of 10 % of the contract value is reached, the contract is deemed to have been breached and the Procuring Entity may consider its right to cancelling the Contract. In such an event the Procuring Entity shall be at liberty to retain the amount of liquidated damages from any money due by the Procuring Entity to the Provider but without prejudice to other methods of recovery open to the Procuring Entity.

### **Alteration of specification etc.**

- 14 The Procuring Entity reserves the right to alter from time to time any specifications, patterns and drawings relating to the Contract, and as from the date specified by it for any such alteration, the Articles shall be in accordance with the specifications, patterns and drawings so altered.

In the event of such alteration involving an alteration in the cost of, or in the period required for production, or in the time for delivery of the Contract prices and of the time for delivery shall be made by the parties to this Contract or agreement or in the event of disagreement by an arbitrator appointed by the parties in relation to the Articles which are the subject of the alteration, but in all other respects the Contract shall remain unaltered.

### **Quantities**

- 15 The quantities shown in the Pricing Data are the estimated probable requirements to be supplied in the period of four months from the date of award of the Contract, but the actual quantities ordered and supplied shall be at the sole discretion of the Procuring Entity.

### **Minimum Quantities**

- 16 The price stated in the Pricing Data for an article shall be for the minimum quantity the Provider is prepared to supply in one consignment. Should no minimum quantity price be stated in the Pricing Data then such minimum quantity will be deemed to be one unit of the article described.

## Packages

- 17 Unless otherwise provided by the Contract:-
- i. The Articles are required to be properly packed for long term storage in containers suitable to protect the contents against damage through rough handling and for over-storage in transit or whilst in store.
  - ii. All containers (including packing cases, boxes, tins drums and wrappings) supplied by the Provider shall be considered as non-returnable, and their cost having been included in the Contract price.

## Marking

- 18 When so directed the Provider shall mark each Article clearly and indelibly in accordance with the requirements shown in the Scope of Supply. The marking shall include any serial number or mark allocated to the Article, and if the Article has a limited shelf life, the date of manufacture expressed as required in the Scope of Supply or, in default of such a requirement, as month (letters) and year (2figures). Where because of its size or nature it is not possible to mark the Article with the required particulars these shall be marked on the package or container in which the Article is packed.

## Price

- 19 Unless otherwise stated in the Pricing Data the price shall be the price of the Article packaged and delivered inclusive of insurance to the consignee at Centurion, Pretoria or where otherwise stated and at risk to the Provider unless otherwise specified in the Scope of Supply.

## Price Variation

- 20 Prices charged by the Provider for the Articles delivered shall not vary from the prices quoted by the Provider in its tender, with the exception of any price adjustments authorized in the **Contract Data**.

## Delivery Notes / Invoices

- 21 Except where otherwise directed each delivery of Articles shall be accompanied or preceded by a delivery consignment or advice note addressed to the officer at the place where the Articles are delivered. Immediately after despatch of the Articles a priced invoice shall be posted or delivered in accordance with the instructions set out in each order and must bear the number in accordance with the Scope of Supply.

## Payment Terms

- 22 The Contract Price, including any Advance Payments, if applicable, shall be paid as specified in **the Contract Data**. The Provider's request for payment shall be made to the Purchaser in writing accompanied by invoices describing, as appropriate, the Goods delivered and Related Services performed, and by the documents required and upon fulfillment of all other obligations stipulated in the Contract. Payments shall be made



promptly by the Procuring Entity, but in no case later than sixty (60) days after submission of an invoice or request for payment by the Provider, and after the Procuring Entity has accepted it.

### **Indemnity**

- 23 The Provider shall not, in connection with the Contract use, manufacture, supply or deliver any process, Articles, matter or thing, the use, manufacture, supply or delivery of which would be an infringement of any patent rights or proprietary marks or descriptions and the Provider shall indemnify the Procuring Entity from all proceedings, damages, costs, charges, expenses, loss and liability which the Procuring Entity may sustain, incur or be put to by reason or inconsequence directly of any breach of this provision (whether wilful or in advertent) and against the payment of any royalties or other monies which the Procuring Entity may have to make to any person or body entitled to exclusive rights in respect of any process, Articles, matter or thing used, manufactured, supplied or delivered by the Provider in connection with the Contract.

### **Gratuities etc.**

- 24 The Provider shall not offer, pay or cause to be offered, paid or given, directly or indirectly any fee, gratuity or reward in money or any other form to any person in the employ of the Procuring Entity.

### **Extension of Time**

- 25 If at any time during performance of the Contract, the Provider should encounter conditions impeding timely delivery of the Articles, the Provider shall promptly notify the Procuring Entity in writing of the delay, its likely duration, and its cause. As soon as practicable after receipt of the Provider's notice, the Procuring Entity shall evaluate the situation and may at its discretion extend the Provider's time for performance, in which case the extension shall be ratified by the parties by amendment of the Contract.

### **Termination of Contract**

- 26 In case the Provider shall be in breach of any of the terms and conditions of this Agreement, or shall on any occasion fail in the due and punctual supply of any of the Articles to be supplied under the Contract, or shall repeatedly offer any article of an inferior quality to that Contracted for, or at any time fail to replace such Articles when properly rejected the Provider shall be deemed to have failed in the due performance of the Contract and the Procuring Entity shall be at liberty by notice in writing or otherwise to terminate the Contract, but without prejudice to the Procuring Entity's rights of retention and recovery in respect of any loss or damage sustained.

**Force majeure**

- 27 The Provider shall not be liable for forfeiture of its liquidated damages, or termination for default if and to the extent that its delay in performance or other failure to perform its obligations under the Contract is the result of an event of Force Majeure.

For purposes of this Clause, "Force Majeure" means an event or situation beyond the control of the Provider that is not foreseeable, is unavoidable, and its origin is not due to negligence or lack of care on the part of the Provider. Such events may include, but not be limited to, acts of the Procuring Entity in its sovereign capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions, and freight embargoes.

If a Force Majeure situation arises, the Supplier shall promptly notify the Procuring Entity in writing of such condition and the cause thereof. Unless otherwise directed by the Procuring Entity in writing, the Provider shall continue to perform its obligations under the Contract as far as is reasonably practical and shall seek all reasonable alternative means for performance not prevented by the Force Majeure event.

**Settlement of Disputes**

- 28 The Procuring Entity and the Provider shall make every effort to resolve amicably by direct informal negotiation any disagreement or dispute arising between them under or in connection with the Contract.

## Contract Data

### Data provided by the Procuring Entity

Procuring Entity	The Procuring Entity stated in the General Conditions of Contract is represented by Orange – Senqu River Commission Name: Michael Ramaano Address: Block A, 66 Corporate Park, 269 Von Willich Avenue (Cnr Von Willich & Lenchen), Centurion 0157, South Africa Tel: +27 12 663 6826 Email: mike.ramaano@orasecom.org
Consignee	The delivery address is: Department of Water Affairs Contact's Name: Ms Nthati Toae Location: Box 772 Maseru, Lesotho Tel No. +266 2231 3485      Mobile: Email:toaenthathi@gmail.com

## **Part 2: Contract Pricing**

### **Pricing Instructions**

#### **1 PRICE**

The unit price shall include delivery to Maseru, Lesotho as referred to in the schedule of quantities inclusive of the cost of Packaging, Insurance, Transportation, Labour costs, Material costs and Overheads and the net all discounts being allowed.

#### **2 CURRENCY AND PAYMENT**

- a) The prices and rates are to be stated in South African Rands or United States Dollars.
- b) Payment to international suppliers shall be based on the relevant exchange rates of South African Rand or US Dollar prevailing on the date of closure of the tender. The rates to be used will be that of Reserve Bank of South Africa.
- c) Goods originating from South Africa quoted for and paid in Rands only.

#### **3 VALUE ADDED TAX (VAT)**

- a) All prices shall be exclusive of VAT except on the total.
- b) Proof of VAT registration shall be submitted by VAT registered bidders
- c) VAT exclusion on the Total by VAT registered bidders shall render the bid non-compliant and not fit for consideration for award.

#### **4 FOREIGN EXCHANGE LINKED PRICES**

- a) Where prices are subject to foreign exchange rates movement the exchange rates to South African Rand/ US Dollar on which the imported component is based (directly) shall be quoted as at date of closure of the tender.
- b) The exchange rate shall correspond to the prevailing mid-rate quoted by Reserve Bank of South Africa

#### **5 CURRENCY FLUCTUATION**

- a) The price and rates are to be stated in South African Rands or United States Dollars. Bidders shall insert in the schedule of quantities the price per unit of each article for which they wish to be considered for.
- b) If the prices quoted are subject to currency fluctuations, the bidders should explicitly state in their response in order to be eligible to claim.

## **Returnable Document**

### **Contract Part 2:**

### **SCHEDULE OF QUANTITIES: SUPPLY, INSTALLATION, TRAINING AND COMMISSIONING OF WATER QUALITY MONITORING AND LABORATORY EQUIPMENT FOR ORASECOM MEMBER STATES**

- Note: Goods shall be delivered to **Department of Water Affairs, Maseru, Lesotho**

#### **Detailed Technical specification**

Supply, installation, training and commissioning of water quality monitoring and laboratory equipment that will be used for the monitoring of water quality on both surface and groundwater resources within the Orange – Senqu river basin. The equipment should be able to meet as a minimum all specifications shown in the sections below with verified proof or clarity in the attached brochures, catalogues or technical data sheets.

#### **Equipment to be delivered to the Department of Water Affairs in Maseru, Lesotho**

##### **a. Water quality monitoring Datalogger Specification**

##### ***i. Groundwater Water quality with GPRS telemetry (10 Units required)***

<b>Sensor module - 3 Sensors plus pressure and temperature plus ext. sensors</b>	
Relative pressure sensor	0 ... 10 m; 0 ... 20 m; 0 ... 50 m; 0 ... 100 m water level
Absolute pressure sensor	800 - 2,100 mbar; 800 - 6,100 mbar; 800 - 11,100 mbar
Temperature sensor	0 °C ... 50 °C; resolution: 0.04 °C
Conductivity sensor	0 0.2/2/20/500 mS/cm; resolution up to 0.1 µS/cm
pH	1 ... 14, resolution $\Delta\text{pH} = 0.01$
Redox potential	-2,000 ... +2,000 mV; resolution 1 mV
pH/Redox – combination sensor	pH 1 ... 14; redox -2,000 ... +2,000 mV
DO [O <sub>2</sub> ] – luminescence	0 ... 40 mg/l O <sub>2</sub> ; resolution 0.02 mg/l O <sub>2</sub>
Ion selective sensors	Chloride, nitrate, ammonia and bromide
External sensors	Turbidity: chlorophyll – to be connected by separate cable
Dimensions	Measurement probe: diameter: 48 mm; length: 600 mm
Material with medium contact	Stainless steel; POM (Polyoxymethylene), PUR (Polyurethan), EPDM (Etylen-Propylen-Dien rubber), NBR, PE plus sensor materials
Probe cable	Cable sheath PUR or PE
Operating temperature range	0 °C ... 50 °C SENSODive; data logger -25 °C ... +70 °C
<b>Data logger:</b>	
Telemetry	GSM/ GPRS modem, 900 MHz, 1,800 MHz, GSM: 800, 850, 1,900 MHz, option 3G, option LTE or 4G NB-IoT modem  Optional integrated Iridium modem for the Iridium satellite system with the widest possible complete worldwide coverage. Iridium Modem 1616...1626,5 MHz; No activation via SIM card, but activation via IMEI registration at the

	provider.
	Option: LoRa® or LoRaWAN® – 868 MHz
Data security	Option: TLS - client-server certificate
Optional: air pressure sensor	Optional: air pressure sensor
Option: Bluetooth	Bluetooth LE for wireless basic parameterization and data display only with 3G-modem or LTE-modem
Power supply	2 - 4 lithium batteries– 13/26Ah or 4 alkaline Baby 1.5 V (Duracell) or Li-Ion accumulators, 5.2 Ah, definition with offer
Dimensions	Diameter 48 mm, length 700 mm
Protection degree	Option 1 – with air pressure membrane: IP 65 Option 2 – without capillary: IP 68 Option 3 – without capillary, with air pressure sensor: IP 68
Optional: external antenna	Mountable with the same protection degree

## **ii. Surface Water quality with GPRS telemetry (10 units required)**

<b>Sensor module - 6 Sensors plus pressure and temperature plus ext. sensors</b>	
Absolute pressure sensor	800 - 2,100 mbar; 800 - 6,100 mbar; 800 - 11,100 mbar
Temperature sensor	0 °C ... 50 °C; resolution: 0.04 °C
Conductivity sensor	0...0.2/2/20/500 mS/cm; resolution up to 0.1 µS/cm
pH	1 ... 14, resolution ΔpH = 0.01
Redox potential	-2,000 ... +2,000 mV; resolution 1 mV
pH/Redox – combination sensor	pH 1 ... 14; redox -2,000 ... +2,000 mV
DO [O <sub>2</sub> ] – luminescence	0 ... 40 mg/l O <sub>2</sub> ; resolution 0.02 mg/l O <sub>2</sub>
Turbidity	0 - 25/125/500/2500 NTU
Ion selective sensors	Chloride, nitrate, ammonia and bromide
External sensors	Chlorophyll – to be connected by separate cable
<b>Data logger:</b>	
Telemetry	GSM/ GPRS modem, 900 MHz, 1,800 MHz, GSM: 800, 850, 1,900 MHz, option 3G, option LTE or 4G NB-IoT modem  Optional integrated Iridium modem for the Iridium satellite system with the widest possible complete worldwide coverage. Iridium Modem 1616...1626,5 MHz; No activation via SIM card, but activation via IMEI registration at the provider.  Option: LoRa® or LoRaWAN® – 868 MHz
Data security	Option: TLS - client-server certificate
Optional: air pressure sensor	Optional: air pressure sensor
Option: Bluetooth	Bluetooth LE for wireless basic parameterization and data display only with 3G-modem or LTE-modem
Power supply	Option 1 accumulator: 12 V, 6,5 Ah for data logger and sensor useable Option 2 Solar: Additional solar charger mounted in the aluminum housing
Dimensions	Diameter 48 mm, length 700 mm
Protection degree	Option 1 – with air pressure membrane: IP 65 Option 2 – without capillary: IP 68 Option 3 – without capillary, with air pressure sensor: IP 68
Optional: external antenna	Mountable with the same protection degree

### **Laboratory Analysis specifications**

- Microbiological
- Sediment load scan

### **b. Laminar Flow Hood Specifications: 1 unit required**

- General Construction: Polypropylene & Powder Coated Steel Structure
- Side Panels: Transparent Non-Dissipative PVC or Static-Dissipative PVC windows
- Prefilters: Washable Polyurethane Foam
- Final Filters: HEPA: 99.99% efficient @ 0.3µm particles or ULPA: 99.999% efficient @ 0.12µm particles
- Fan Motor: Direct drive, forward curve, centrifugal-type with sealed bearings; rated for continuous duty; furnished with overload protection and a two-speed switch. Rated .25 HP @ low speed; .333 HP @ high speed (2' x 4' models)
- Average airflow velocity: 90 feet/minutes (fpm)
- Air Flow: 4-Foot Models: High Speed 580 CFM or 490 CFM @ 90fpm; 3- & 6-Foot Models: High Speed 540 CFM or 440 CFM @ 90fpm
- Sound level: 50 dBA, measured no more than 30" from filter face @ 90 FPM
- Electrical: 110VAC, 50/60Hz (or 220VAC, 50 Hz). Meets the requirements of the National Electrical Code and applicable local codes. All components UL listed and CE marked
- Performance: Particle count exceeds Class 100 requirements.

**c. White Diamond Series Refrigerator & Freezer Combination with Auto Defrost Freezer: (1 unit required)**

- 12 Cu. Ft. capacity (10.5 Ref./1.3 Freezer)
- Two exterior swing doors (glass door refrigerator/solid door freezer), right hinged, not reversible
- Microprocessor temperature controller, refrigerator and freezer
- Digital temperature display with sample simulated probe, refrigerator and freezer
- Adjustable operating temperature range: Refrigerator: 1°C – 10°C; Freezer: -15°C – -25°C
- Auto defrost cycle every 6 hours, max air temp in empty freezer: +4.34°C; max air temp in loaded freezer: -2.89°C. Max sample temp in empty freezer: -4.76°C; max sample temp in loaded freezer: -9.58°C.
- Audible and visual high and low temperature alarms, refrigerator and freezer
- Remote alarm contacts, refrigerator and freezer
- Six adjustable shelves with guard rail on back to prevent product from being pushed against back wall, Refrigerator
- Two adjustable shelves with guard rail on back to prevent product from being pushed against back wall, Freezer
- Bottom footed shelf to allow air circulation, Refrigerator and Freezer
- Keyed door locks; Leveling legs; Stacking kit
- Two probe access ports (3/8"); one, refrigerator/one, freezer

- HFC-free refrigerant (R600a), foam insulation and packaging

#### **d. Groundwater level monitoring Datalogger Specification (10 units required)**

##### Water level, temperature, and conductivity logger with GPRS telemetry

<b>CTD - sensor</b>	
Relative pressure sensor	0 ... 10 m; 0 ... 20 m; 0 ... 50 m; 0 ... 100 m water level
Accuracy	0.05 % FS at 10...40°C; resolution 0.002 % FS
Temperature sensor	0 °C ... 50°C; resolution 0.04 °C
Conductivity sensor / graphit electrode	0- 0,2/2/20/200 mS/cm; resolution up to 0,1 µS/cm - four electrode system
Salinity and TDS	Calculated
Probe cable	Material PUR with air pressure capillary
Dimensions	Diameter probe: 22 mm; length: 340 mm
Material with medium contact	Stainless steel; POM (Polyoxymethylene), PUR (Polyurethan), EPDM (Etylen-Propylen-Dien rubber), NBR, PE plus sensor materials
<b>Data logger and telemetry unit</b>	
Dimensions:	Diameter: 48 mm, length: 700 mm
Protection degree:	Option 1 – with air pressure membrane: IP 65
Temperature range:	-25 °C ... 70 °C
Power supply:	4 batteries, type Duracell Alkaline – up to 8 Ah
Wireless data transfer:	4 band GSM/ GPRS modem, 900 MHz, 1,800 MHz, GSM: 800, 1,900 MHz + 4G (LTE) or 4G (NB-IoT), or optional integrated Iridium modem for the Iridium satellite system with the widest possible complete worldwide coverage. Iridium Modem 1616...1626,5 MHz; No activation via SIM card, but activation via IMEI registration at the provider.
Optional: external antenna	Mountable with the same protection degree

#### **e. Surface water level monitoring Datalogger Specification (10 Units required)**

##### i. Water level and temperature logger with GPRS telemetry

<b>Level and temperature sensor</b>	
Relative pressure sensor	0 ... 10 m; 0 ... 20 m; 0 ... 50 m; 0 ... 100 m water level
Accuracy	0.05 % FS at 10...40°C; resolution 0.002 % FS
Temperature sensor	0 °C ... 50°C; resolution 0.04 °C
Probe cable	Material PUR with air pressure capillary
Dimensions	Diameter probe: 22 mm
Material with medium contact	Stainless steel; POM (Polyoxymethylene), PUR (Polyurethan), EPDM (Etylen-Propylen-Dien rubber),,, NBR, PE plus sensor materials
<b>Data logger and telemetry unit</b>	
Dimensions:	Diameter: 48 mm, length: 700 mm
Protection degree:	Option 1 – with air pressure membrane: IP 65
Temperature range:	-25 °C ... 70 °C
Power supply:	4 batteries, type Duracell Alkaline – up to 8 Ah
Wireless data transfer:	4 band GSM/ GPRS modem, 900 MHz, 1,800 MHz, GSM: 800, 1,900 MHz + 4G (LTE) or 4G (NB-IoT), or optional integrated Iridium modem for the Iridium satellite system with the widest possible complete worldwide coverage. Iridium Modem 1616...1626,5 MHz; No activation via SIM card, but activation via IMEI registration at the provider.
Optional: external antenna	Mountable with the same protection degree



## ii. Steel Gauge Plates specification (x52)

52 units required as per the breakdown below

Item	Description	Unit (m)	Quantity
1	1 <sup>st</sup> range	0 – 1.5	10
2	2 <sup>nd</sup> range	1.5 – 3	10
3	3 <sup>rd</sup> range	3 – 4.5	10
4	4 <sup>th</sup> range	4.5 – 6	10
5	5 <sup>th</sup> range	6 – 7.5	10
6	6 <sup>th</sup> range	7.5 – 9	2
Total number			52

## iii. Installation and Training

Dataloggers should include the following as minimum.

- USB comms cable for datalogger programming
- Zednet cloud application for real-time monitoring ( $\geq 3$ years licenses)
- SIM cards and Data plan for the GSM network
- Manufacturer Warranty period (in years)
- Equipment Installation and Training

### **f. Protection of data loggers and sensors against theft and vandalism**

It is essential that the installation of both surface and groundwater data loggers be protected against theft and vandalism. Therefore, a proposal should be made for the protection of the sensor unit and the data logger. Also, important to outline how the whole system once protected will function with regards to monitoring by the relevant personnel.

### **g. Chemicals**

Supply all the necessary high purity chemicals and reagents for commissioning and training during the installation phase of the instruments.

### **h. Validity for the supply of service parts**

Provide a confirmatory assurance and commitment letter that production of the instrument parts shall be in force for a minimum of 10 years from date of tender submission i.e. the instrument parts should be available in the market for use in the service and maintenance for the duration of at least ten years from date of tender closing.

**i. Commitment for after - sales support**

Provide a confirmatory assurance for the availability of after sales support with turnaround time of not less than 48 hours for at least 2years from tender submission date.