

TERMS OF REFERENCE FOR COMMUNITY BOREHOLE DRILLING IN LEER COUNTY, UNITY STATE

TITLE:

Terms of Reference for borehole rehabilitation works in Leer County, Unity State

INTRODUCTION:

Coalition for Humanity (CH) is a non-profit organization committed to finding lasting solutions to humanitarian and development challenges in South Sudan. CH has its headquarters in Juba, with a presence in Leer, Panyijiar, Mayiendit, Koch, Mayom, and Rubkona counties in Unity State; Maiwut and Longuchuk in Upper Nile State; Ruweng Administrative Area; Aweil West in Northern Bahr El Ghazal (NBeG); and Pochalla in Greater Pibor Administrative Area (GPAA).

Starting in 2020, CH has integrated humanitarian response approaches with sustainable development programming. In addition to emergency response, the organization focuses on sustainable development goals, with goal 16 forming the backbone of its interventions. CH advocates for peace and security while continuing to improve access to water and sanitation, food security and livelihood, healthcare and education, and ending gender-based violence (GBV) and other forms of inequality in the country.

CH is currently implementing a WASH program in nutrition facilities in Leer County, funded by SSHF. To support this program, CH is advertising for services of borehole drilling contractors.

BACKGROUND

Coalition for Humanity (CH), therefore, seeks a contractor to carry out the works of mobilizing machinery, drilling boreholes, and provide all the required tools, equipment, materials, labor and ensure that all the necessary requirements of borehole development and testing are up to the required standards as clearly specified on the technical specifications.

SCOPE OF WORK

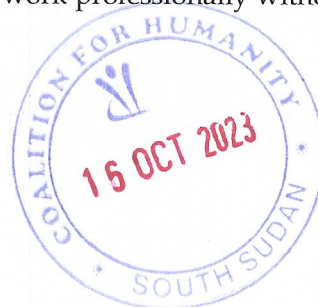
Under the guidance of the WASH Team, the contractor will drill one (1) borehole and install an India Mark II hand pump in Rubinchar Payam, Leer County in Unity State.

1. Technical specification

Construction materials shall be provided by the contractor, who is expected to handle them with care to avoid loss on site and to perform the work professionally without any material wastage.

1.1. Mobilization

The Contractor shall note the following:



- Food, accommodation, and storage facilities: The Contractor shall make their own arrangements for food, accommodation, and storage facilities on the ground.
- Plant and equipment: The Contractor shall provide all plant and equipment and share a list of their equipment, including drilling plant and tools, as part of the tender document.
- Key person: The Contractor shall nominate one key person who shall be responsible for the assignment on their behalf and shall be the Contractor's site representative. This person is indicated on the list of personnel which is part of the tender document.
- Transportation and security: The Contractor shall arrange for the transportation and security of all equipment and staff. They shall take all necessary precautions to ensure the security and safety of works, materials, equipment, and people associated with the works.
- Liaison with local authorities: Coalition for Humanity shall liaise with the local authorities to ensure that the roads/sites are accessible to the contractor in order for them to execute the works in a timely manner.

1.2. Siting of boreholes

CH staff and community representatives have identified the community in need and are proposing the approximate location of the boreholes. The contractor must locate at least three potential sites for the borehole and prioritize them. The final site selection will be made in collaboration between the contractor's staff, CH staff, and the community. The contractor will submit a hydrogeological report to CH.

The contractor shall be responsible for conducting vertical electrical depth sounding (VES) geophysical surveys on the drilling sites. The contractor must have competent staff, equipment, and software to carry out the surveys and interpret the data.

1.3. Drilling

Section 1: Drilling Procedure

The contractor shall be responsible to select the appropriate drilling procedure for the geology of the drilling site. The diameter must be adequate to accommodate the final borehole casing diameter plus a minimum annular space of 50 mm. The contractor may choose to either drill a hole of the desired diameter on the first pass or to drill a smaller diameter test hole and then ream it to the final size. Regardless of the procedure used, payment shall only be made for the sufficient water source that meets the required water standards

Section 2: Drilling Method and Fluid

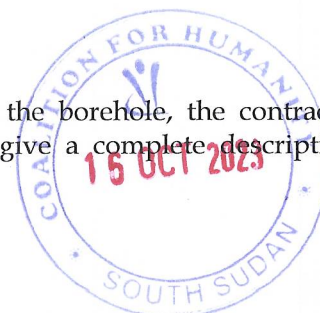
The drilling method, drilling plant, drilling fluid, and fluid additives are subject to approval and must be mentioned in the tender document. The drilling fluid and additives must be non-toxic and biodegradable. The contractor is responsible for supplying the drilling fluid and additives.

Section 3: Drill Cuttings

Drill cuttings must be placed in containers provided by the contractor. The contractor must have sufficient sample containers at the site to accommodate all of the samples collected. The samples must be kept available for inspection until the supervisor gives permission to dispose of them.

Section 4: Driller's Report

During the drilling, completion, and development of the borehole, the contractor must maintain a detailed driller's report. The report must give a complete description of all



formations encountered, the number of meters drilled, the number of hours spent drilling, any shutdowns due to breakdowns, the length and type of casing and screen set, and other pertinent data as requested by the CH supervisor. The format of the report must be approved by the supervisor in advance and must be signed by both the driller and the supervisor on a daily basis.

In addition, the contractor must measure and monitor the following:

The depth of the borehole in progress

The static water/mud level in the borehole

The different depths of water strikes and aquifers

The penetration rates at various strata or when changing tools

Section 5: Payment

The contractor will be paid unit prices per meter drilled. The unit prices per meter must include all costs associated with the drilling, such as drilling additives and the preparation of daily drilling reports.

1.4. Borehole construction

The final depth of the borehole and the other relevant depths involved in the design of the borehole shall be determined from measurements made by the contractor and the supervisor. The design of the borehole (intervals to be cased and screened, screen slot opening, etc.) are to be approved by the supervisor.

The gravel pack should consist of well graded river gravel. Under no condition should rock chippings be used. The material should be free of shale, mica, clay, dirt or organic impurities of any kind. The material should be carefully introduced into the hole to avoid bridging. The last 6 meters of annular space shall be filled with cement grout to provide a sanitary seal after the development of the borehole.

1.5. Borehole development

The contractor shall develop the borehole by a combination of jetting with water and surging with air. The borehole shall be developed with great care to avoid any damage to the casings and screens. The development shall continue until the borehole is judged to be free of sand by the supervisor.

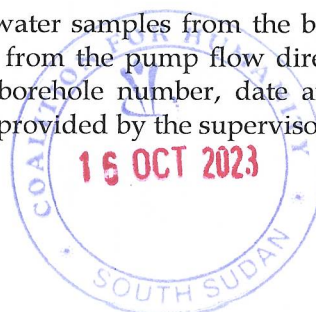
1.6. Pump testing

The contractor shall conduct a pumping test on every successful borehole. The pump testing shall be at a constant yield and continuous pumping of 1m³/h for a period of 10 hours. Immediately after the pumping, the contractor shall measure the water-level recovery in the borehole over a minimum period of 1 hour, unless the water level has recovered to the original level before.

During both the pumping and the recovery periods, the contractor shall measure the water level in the borehole using a calibrated electronic sensing device. The water level measurements are to be taken in accordance to the schedule indicated by the supervisor. The contractor shall analyze the results of the pumping test and report the results on forms provided by the supervisor before further installations.

1.7. Water quality analysis

During the pumping test, the contractor shall collect water samples from the borehole for water quality analysis. The samples shall be collected from the pump flow direct into the container. The containers shall be labelled with the borehole number, date and time of sampling. The information shall be entered into a form provided by the supervisor.



The contractor shall have tests carried out in a laboratory approved by the supervisor to determine the following parameters: colour, odour, taste, electrical conductivity, pH, turbidity, temperature, manganese, total hardness, Iron, chloride, fluoride, arsenic, nitrate and sulphate. Microbial parameters shall comprise faecal coliform counts.

1.8. Borehole disinfection

After completion of the pumping tests the contractor shall undertake final disinfection of the borehole with a hypochlorite calcium solution with a concentration of 50mg/L of free chlorine. The chlorine shall be applied uniformly throughout the entire depth of the water in the borehole. All accessible portions of the borehole above the water shall also be wetted with a chlorine solution.

1.9. Construction of concrete pad and animal Trough

The Contractor shall construct a concrete pad around the borehole casing sticking above the ground (around 30cm) and continuous with the underlying 6 m cement grout in the sanitary seal. The pad shall be 2m in diameter. The concrete shall be cast over a layer of compacted hard core with a minimum thickness 200 mm above the ground and continuous with the underlying cement grout. The drainage channel shall be at least 6 m long, sloping away from the pad. The animal trough should be 1.8m². The Contractor shall ensure that the sides of the pad are straight by properly anchoring the forms. The top of the pad shall be troweled to a smooth surface. The contractor shall keep the surface of the concrete pad moist for a period of 72 hours after the concrete has been placed.

1.10. Installation of Indian Mark II hand pump

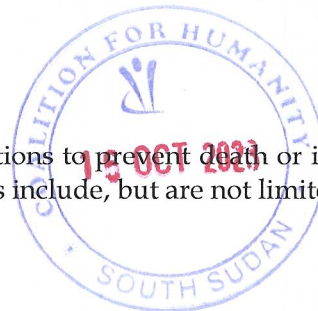
Prior to leaving a borehole unattended at any time, the contractor shall place a temporary cap on the borehole casing. An Indian Mark II hand pump with all its accessories shall be installed at the borehole, however for lifting water beyond 45m Indian Mark II extra deep shall be installed. All necessary parts and tools for the installation are provided by the contractor.

ROLE OF THE CONTRACTOR

- 1) The contractor is responsible for the construction and completion of all work described in the contract and contractual documents, including the ToRs and annexes. The contractor must provide all labor, materials, tools, equipment, transportation, food, and supplies necessary to complete the work in accordance with the specifications and terms of the contract. The contractor cannot deviate from the construction designs or specifications without seeking and receiving permission and approval from the client (CH).
- 2) If the contractor is unable to complete the drilling or has to abandon the borehole due to loss of tools, accidents, or any other unforeseeable circumstances, the contractor must remove the casings or drive pipes already in the hole and refill it with clay or concrete. All materials extracted from the hole after refilling it will become the property of the contractor. CH will not pay for any of the work carried out, and will only authorize the drilling of a new hole, at a site near the abandoned one, if necessary, at the contractor's expense.

HEALTH & SAFETY

The contractor's team leader must take reasonable precautions to prevent death or injury to persons during all undertaken activities. These precautions include, but are not limited to:



- Providing crew members with safety helmets, hard-toed boots, heavy-duty gloves, and protective glasses
- Ensuring that all tools and equipment are in a safe condition
- Ensuring that employees adopt safe working methods
- Providing the drilling crew with a uniform to be worn at the site. Military-looking clothing is not permitted at any time.

Under this contract, the contractor's team leader is obligated and responsible to safeguard the safety and security of its personnel, the drilling crew's equipment and other property, and personnel's personal effects and other property. The contractor's team leader must develop a security plan in consultation with CH, including detailed procedures to cover evacuation, personnel, equipment, unlawful interference, and prevention of sabotage.

REQUIREMENTS OF THE CONTRACTOR FOR THE TENDER

Experience

- To be accepted to participate in the tender process, contractors must provide evidence of satisfactory completion of at least 15 boreholes in South Sudan with other NGOs or the government
- Demonstrate financial capacity to handle large contracts

Equipment and Workforce

- Contractors must submit a list of the drilling equipment they will use for the contract, specifying the name, model, quantity, and year of manufacturing.
- All equipment listed must be in perfect operational condition. If changes are required during the execution of the contract, the contractor must put in place equipment of similar characteristics and inform CH in writing.
- Contractors must also submit a list of the workforce they intend to use for the project, detailing the percentage of females and males.

Time for Completion

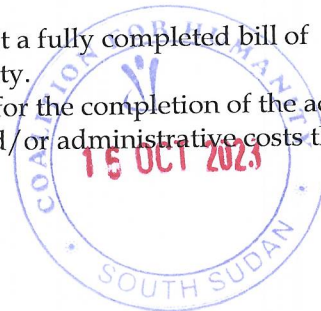
- The contractor must complete the work within a maximum of 2 months after the signing of the contract.
- For the tender process, the contractor must submit a work schedule that aligns activities with the completion period.
- Any bid whose schedule goes beyond the project estimated completion period of 1 month will not be accepted.
- In the case of delays in the implementation process of the project, penalties will follow with immediate effect. The penalty criteria will be stipulated in the contract document.

Legal Documents from the Government of South Sudan

- The contractor must present a copy of the following:
 - Valid drilling certificate
 - Company's registry in the South Sudan's Ministry of Legal Affairs
 - Trading license

Bidding Amount

- Companies participating in this tender must submit a fully completed bill of quantities (BoQ) with the unit prices for each activity.
- The full amount quoted should cover all expenses for the completion of the activities under the contract, as well as any indirect costs and/or administrative costs that the contractor must incur.



DEFECT LIABILITY PERIOD

The borehole will be guaranteed for a period of 6 months after completion. In an event that there are defects found on the borehole within the 6 months' period, the contractor will be notified and authorized to correct all the said defects before the contractor is paid the retention amount.

APPLICATION:

Interested COMPANIES who meet the conditions specified herein are invited to submit their tender documents including legal documents and a clear demonstration of understanding and interpretation of this Terms of Reference (TOR) to procurement.juba@ch-int.org
Remember to indicate the title of this TOR in the subject line of the e-mail, to reach us not later than **30th October, 2023**

Proposals in hard copies must be sealed and bound in one document and sent to the following address:

Coalition for Humanity (CH), Gudele 1 Area, Block 4 Plot No. 1784 Off Gudele Road Along Seven Eleven Supermarket Road next to Big Ben Primary School, Juba South Sudan | +211 (0) 917 094 299 /<http://www.ch-ssd.org/>

