INVITATION TO TENDER

Ref: CA/ZVBP-BH/01/25

Tender for borehole drilling and solarization of three (3) boreholes in Mbire District.

1. CAMPFIRE Association is inviting tenders from reputable individuals/organizations to submit bids for borehole drilling and solarization of three (3) boreholes under the wet hole policy as per the provided technical specifications.

2. Bids should be provided in **United States Dollars (USD)** value and addressed to;
   CAMPFIRE Association
   C/O UNDP GEF 6 Project
   Mukuvisi Woodlands
   Cnr Glenara Ave South & Hillside Rd
   Harare

3. Completed bids (three copies) sealed in an envelope should state the Tender reference "Borehole Drilling and Solarization Tender GEF 6," and should be submitted and deposited in the tender box at CAMPFIRE Association Offices; on the above-mentioned address.

4. **Closing date for submission of bids is 1200hrs, 13 June 2025**.

5. We encourage bidders to use the provided costing template to ensure uniformity in costing. The template is attached separately to this invitation to tender.

TECHNICAL SPECIFICATIONS AND PROCEDURES

1. SCOPE OF WORK

CAMPFIRE Association (CA) would like to engage the services of specialists in the drilling industry to perform the following assignments:

- Hydro-geological surveying of three (3) borehole sites for possible drilling in Mbire District; Irira area in Angwa Ward 2 – 1 borehole and Mariga area in Kanyemba Ward 1 – 2 boreholes. ***These boreholes are intended for domestic use and the minimum expected yield is 1/ litre per second for mechanization. Anything less will be considered as a dry hole.***
- Production and submission of a complete hydro-geological survey report before drilling commences showing at least three possible sites (GPS coordinates for all surveyed sites should be shown in the reports, TDS, etc.). Groundwater sampling and analysis to include but not limited to Electrical resistivity tomography (ERT) surveys, Ground-penetrating radar (GPR) surveys, Geophysical logging (if existing wells are present), Analysis of Groundwater flow patterns, Analysis of Aquifer properties and Water quality on existing water sources. Identification of potential drilling locations with potential high yielding boreholes within the premises and around the premises or radius of the premises in dryer areas. Identify the type of drilling based on geographical location and propose drilling depth which ensures sufficient water supply and meets the daily water demands. Creating maps that show the distribution of groundwater in the area, including its depth, quality, and movement. Creating detailed maps of the area's geology to identify formations that may contain groundwater. Using electrical/ acoustic/ logs to determine the depth and thickness of aquifers and confining layers. Using GPR to image the subsurface and identify potential groundwater resources. Using seismic surveys to create detailed images of the subsurface and identify potential groundwater resources. Provide detailed soil characteristics, bearing capacity, ground water level, and depth of bedrock, soil layers and soil contamination; assess the potential for aggressive attack by the soil on concrete and steel; provide study on seismic vulnerability and underlying ground conditions.
- Produce a sitting report and a hydro-geological survey report. Conduct site surveys (reconnaissance surveys, and geotechnical investigations), conduct water quality tests on existing water sources if available, ground water geo survey, collect data on previous water capacity (yield) tests if available for comparison. Groundwater exploration using different techniques to identify potential groundwater resources and determine their depth and extent and assess the quality and sustainability based on the following i Groundwater flow patterns.
- Development of the boreholes; -drilling and appropriate casing from top to bottom of productive (wet) boreholes.
- Installation of approved PVC screens and casings, as detailed under Technical Specifications.
- Production and submission of drilling reports after drilling for all boreholes drilled.

- Performing capacity and recovery tests for a minimum of **eight hours on all boreholes** in accordance with the specifications as indicated under technical specifications section.
- Submission of a certified water quality test report showing physical, chemical and bacteriological results.
- **The contractor shall indicate duration of the work in a proper work plan, the price for drilling a borehole for each site and total costs of the scheduled work**.

Table 1.1Borehole Site Description

No.	***Site***	***No of boreholes***	***Est. distance from Mushumbi Pools (km)***	***Road condition***	***Exp Yield***
1	*Irira - Chiwapura village*	*1*	*60km*	*Gravel*	*1/ litre per second for mechanisation*
2	*Kanyemba - Nyamakawo village*	*1*	*100km*	*Gravel*	*1/ litre per second for mechanisation*
3	*Kanyemba - Chinhoyi village*	*1*	*100km*	*Gravel*	*1/ litre per second for mechanisation*

2. SURVEYING

2.1 The contractor shall visit the locations, provided above and will determine the road conditions for accessibility of the drilling rig and other heavy equipment.

2.2 Sites to be surveyed should be within easy accessibility of the communities or intended projects. They should not be prone to flooding must be at least 30 meters away from latrines or any other sources of contamination.

2.3 A key requirement for the contractor is to select sites with the highest ground water yield potential among sites preferred by the Community. Sitting methods, which may be used to investigate the feasibility of the sites chosen include, but are not limited to geophysical surveys.

2.4 The Contractor will be responsible for selecting sites that meet the stipulated conditions and is responsible for checking the suitability or feasibility of drilling at these sites. If there's need for the Contractor to select another site that is not one of the sites selected by the Client, then the contractor must provide an explanation in writing to CA / Project Manager prior to the works indicating why an alternative site has been chosen.

2.5 On satisfactory completion of the works, the Contractor shall issue and produce **a sitting report and hydro-geological report** that indicates potential yield and completion of the assignment to the satisfaction of the Project Manager/Engineer.

3. DRILLING AND DEVELOPMENT

The Specifications outlined herein are for the drilling, developing and aquifer capacity testing of sites identified above;

3.1 The Contractor shall employ only competent workmen for the execution of the Works, and all such Works shall be performed under direct supervision of an expert water well driller/site supervisor.

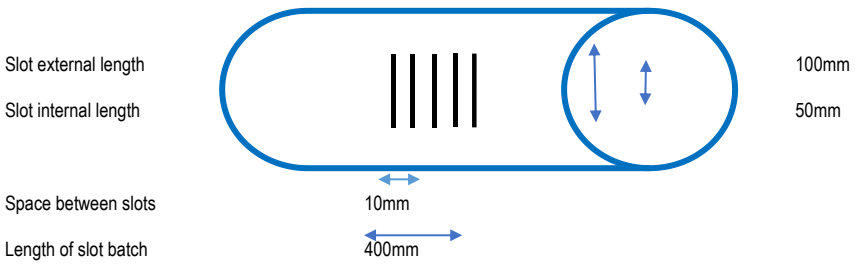
3.2 The drilling method is to be determined by site conditions, as recommended in the hydro-geological report and in consultation with the Project manager/Engineer.

3.3 The Contractor shall provide all labor, transport, plant, tools, equipment and materials and appurtenances, and shall perform all Works necessary to successfully drill, construct and complete boreholes including the cleaning and development of said boreholes.

3.4 **Borehole depths will be dependent on local hydro-geological conditions at the site**. The boreholes will be drilled with 6 5/8-inch drill bits and reamed to a diameter not less than 8 inch for Down The Hole (DTH) drilling, completed in PVC casing and screen of 5 inches nominal diameter for the entire depth. A sand / end cap should be placed at the bottom of the hole to avoid ingress of particles. The Contractor shall employ only competent workmanship for the execution of the works, and all such works shall be performed under direct supervision of a hydrogeological expert or site supervisor. · The drilling method is to be determined by site conditions, as recommended in the hydro-geological report and in consultation with the Engineers on site. · Borehole depths will be dependent on local hydro-geological conditions at the site. The boreholes will be drilled with 6 5/8-inch drill bits and reamed to a diameter not less than 8 inches for Down the Hole (DTH) drilling, completed in uPVC casing and screen of 5 inches or equivalent for nominal diameter for the entire depth. A sand / end cap should be placed at the bottom of the hole to avoid ingress of particles.

3.5 **Slot Density Specifications**; The slot density on non-corrosive 140 mm diameter uPVC class 10 well lining pipe material should be 131slots /meter of pipe extending the full length of the water strike. The slots should be in 4 rows (i.e.2 rows on 2 alternate sides) and should be 1.0mm wide and 50 mm and 100mm long on the internal and external uPVC casings respectively with a 10mm spacing between each slot to resulting in 400 mm long slot batches. There should be a 300 mm interval between slot batches. This is meant to attain good yield without weakening the casing. Figure 1.0 below illustrates how to achieve the required slot density for optimum yield and strength.

Figure 1: Outline of slots on PVC Casings for lining collector wells



3.6 **A sanitary seal** with a minimum depth of 4m should be installed to reduce potential contamination from surface water. Where such a seal is from PVC, a telescopic arrangement of 180mm diameter class 10 should be installed until competent rock formations are encountered; thereafter, class 10 140mm Ø casing plain / slotted is installed to the bottom of the well.

3.7 **Gravel packing** shall be done on screen intervals with a graded gravel pack having a D_{60} / D_{30} Coefficient of Uniformity of 2.5. The minimum diameter of the graded gravel pack should prevent ingress of particles in the well while the maximum diameter should not exceed 6mm. Gravel packing shall be done on screen intervals with a graded rounded hard quartz gravel pack having a D60 / D30 Coefficient of Uniformity of 2.5. The recommended minimum diameter of the rounded graded hard quartz gravel pack shall be 4mm and the maximum diameter should not exceed 6mm.It is recommended that construction that the extraction of the construction be done in tandem with the gravel packing process.Development must be done with appropriate equipment such as jetting tool to clean the hole; to remove all fine particles along the entire depth of the borehole, to allow the gravel pack to settle and eliminate bridging of the rounded hard quartz gravel pack should take place for a minimum of 4 hours. Should the turbidity remain above 5 NTU, development should continue until this value is achieved and the client will certify that this has been achieved.

3.8 **Development** must be done with appropriate equipment such as jetting tool to clean the hole; to remove all fine particles along the entire depth of the borehole, to allow the gravel pack to settle and eliminate bridging of the gravel pack should take place for a minimum of 4 hours. Should the turbidity remain above 5NTU, development should continue until this value is achieved and Client has to certify that this has been achieved.

3.9 **A Capacity test** to determine aquifer properties should be done using a pump with variable capacity in steps to determine borehole yield. The initial pumping rate determined by drilling yield estimates shall be in 3 steps of 40 minutes to determine optimum yield followed by a continuous 2 hours. Such a stepped capacity test should therefore last for at least 4 hours. For each step, a recovery test must be made.

3.10 **Water quality** testing should be done during development and capacity tests. Water samples should be collected for physical, chemical and bacteriological analysis in the laboratory. Where water is contaminated, contractor will chlorinate the boreholes before commissioning.

4. DRILLING EQUIPMENT

4.1 The Contractor shall specify in the Schedule of Drilling Equipment, borehole development and other accessory equipment, its type and capacity that is to be used to undertake this work. Its capacity shall be sufficient to cope with the Works as stated in the Contract. It shall at all times be kept in full working order and good repair.

4.2 If the Client considers that the drilling equipment or any accessories in use on the site of the Works is in any way unsuitable, inefficient or inadequate in capacity, the Client shall have the right to call upon the Contractor to put such equipment in good order within a specified time or within seven days or alternatively to remove such plant and replace it with additional plant or equipment which the Client considers necessary to meet the requirements of the Contract. In the event that this requirement of the Contract is not satisfied, the Client reserves the right to terminate the Contract immediately.

4.3 No extra payment shall be made for the Contractor's change of drilling equipment, labor or other equipment required to complete the Works specified, nor for any incidentals thereto, the cost being deemed to be included in the schedule of rates.

5. BOREHOLE CONSTRUCTION

Basic methods of drilling are indicated below as a guide for accountability and to maintain key dimensional specifications.

5.1 The preferred method of drilling in consolidated compact formations is rotary percussion with air and/or foam flush.

5.2 In unconsolidated loose, unstable and collapsing formations, rotary with appropriate drilling stabilizer will be used. In such a case the drilling diameters will be telescopic starting with diameter large enough to lower temporary casing in upper collapsing formations and continue drilling with a final minimum diameter of 8 inches bit. If other chemical fluids or solids are used to arrest collapsing of formations, the Contractor has to use proper borehole development and cleaning methods to ensure that water from the borehole is safe for drinking purposes. The Contractor will use such fluids or solids with the agreement of the Client.

5.3 **Borehole Depth**; boreholes shall be drilled to such depths as to penetrate below the shallow water table aquifers and tap the first potential deeper aquifer or aquifers in confined/semi-confined conditions with a minimum discharge that meets conditions specified in the scope of work. The depth to be drilled should be as recommended in the

hydro-geological report and should be at least 70m. The depth to be drilled shall be determined by the geophysical survey reports submitted the contractor and shall be agreed upon between the contractor and the client before drilling. However, this will not indemnify the contractor from fulfilling the wet hole policy or minimum drilling depth of 1L/s as required by the contract. The first 4 meters from the surface will have concrete grouting for sanitary protection. For this the bore hole will be reamed with an 8 inches bit and concrete grouting placed in the annular space between the casing and open borehole wall. · Note that drill bit sizes more than those indicated are also acceptable to accommodate the drill bits which the Contractor's rig is equipped with or of which the Contractor may have stocks.The client will not be responsible for any loss of temporary casing which the contractor is unable to pull out or lost due to snapping or breaking from the completed boreholes.

5.4 **Borehole Diameter;** boreholes will be drilled with telescopic diameters. Note that drill bit sizes more than those indicated are also acceptable to accommodate the drill bits which the Contractor's rig is equipped with or of which the Contractor may have stocks. The contractor must take into account the depths he has to drill and lower temporary casing to complete the drilling. This cost must be built in the quoted unit cost for drilling. The client will not be responsible for any loss of temporary casing which the contractor is unable to pull out or lost due to snapping or breaking from the completed boreholes.

5.5 **Screen;** the Contractor will use proprietary; factory-made UPVC slotted screens, the slot size and screen length depending on the aquifer materials and aquifer thickness. The Contractor will take sole responsibility of designing the well assembly and placing screen and casing at appropriate depths to match the positioning of the aquifer(s).
Slotted screens should be of ISO standard and have the following specifications: U-PVC Class 10, drinking water standards, non-toxic and in standard lengths of three (3) meters, nominal inside diameter of 5 inches slot width 0.8 mm and not more than 1mm, and with a percentage open area (internal surface area) of 9.26% per linear meter.

5.6 **Casing Pipe and Sand Trap;** plain casing pipe should be of ISO standard and have the following specifications: U-PVC Class 10, drinking water standards, non-toxic and in standard lengths of six (6) meters, nominal inside diameter of 5 inches, flush jointed for internal diameter of 5 inches and in lengths of 6 meters.
The boreholes will be fully cased up to bottom of the borehole in all unconsolidated formations. The Contractor will take all necessary precautions during the transportation and storage of casing pipes from their warehouse to drilling site to prevent distortions, bending or deformation of the pipe that could result in eccentricity along the length of the pipe. A maximum of 3-meter length of sand trap will be part of the well design when boreholes are cased to the bottom. The sand trap will be from UPVC casing pipe with specifications described above; fitted to the end of last screen and bottom end with an end-cap. The end cap is glued with appropriate solvent cement or solutions as recommended by the UPVC manufacturer. Note that the joints sections are properly cleaned with cleaning fluids and recommended time given for the joint set firmly before lowering into the borehole.

5.7 **Gravel Packing and Grouting;** the annular space between the casing and borehole wall is filled with filter packing materials in the screen intervals and back filling materials. The gravel packing mixture to be used depends on the sieve analysis results and the slot size of the screen. The contractor will do the sieve analysis and then determine the gravel pack materials that should have a maximum diameter that does not exceed 6mm and a D_{60} / D_{30} Coefficient of Uniformity of 2.5. Gravel packing material must be clean, should be stored in a way so as to avoid contamination by finer materials and rain or other sources. Iron and calcareous grains will not be included in the gravel pack materials.

Gravel packing is carried out as continuous feed operations done usually by two people filling uniformly along the circumference of the pipe. It is advisable to add some water with a pipe so that the gravel flows down. If the gravel gets inside the temporary casing, the casing is slowly pulled out and gentle well development ("a pack and pull process") is done to allow gravel to settle properly to a height of 3 meters above the top of the screen interval or the targeted water bearing formation. More gravel is added with development if the gravel settles down. Backfilling and grouting is done when the minimum acceptable yield is confirmed by development. The borehole cuttings are back filled up to 4 meters below the ground surface. The grouting is done with a concrete mix in the ratio of 3:2:1of 19mm aggregate, sand, and cement respectively.

5.8 **On completion of drilling**, the Contractor will choose a suitable and appropriate borehole development method. The borehole shall be developed for a period of 4 hours in order to obtain a maximum yield of water that is free of suspended matter. Developing shall be carried out by airlift pumping and surging, jetting and block surging, or other techniques the contractor feels is more appropriate and efficient to suit the hydro-geological and drilling conditions prevailing in that borehole. Development with appropriate tools such as a jetting tool should be done along the entire length of borehole. All boreholes shall be presented for testing free of any bridging of gravel pack or obstruction by cuttings from the sides of the well to the total depth. At the end of the development process, water turbidity should be <5NTU.

6. PUMPING AND RECOVERY TEST

6.1 A capacity test is required on a routine basis for each borehole and is intended to determine aquifer properties that include transmissivity and water yield of the borehole. The Contractor will estimate the yield from the air lifting rates during borehole development. Based on the estimated discharge, the Contractor will certify the borehole as either "successful" or "lost". For successful boreholes, the Contractor will undertake a eight-hour capacity test of which the first two hours is three steps draw down test. The discharges for the step drawdown test will be fixed by the supervisor based on the borehole development results.

6.2 If the minimum yield is set at 0.25 liters / sec, the second is set close to the estimated yield from well development and the last could be 50 to 75% more than the estimated discharge. As a rule of the thumb, the three steps could be 1.5 liter/sec or above

depending on development results, 0.75 liters /Sec and 0.25 liters/ sec. and each step for 40 minutes (total 2 Hours) the remaining 2 hours at a discharge at which the dynamic water levels gets stabilizes. *If the discharge is below 1 liters/second or dynamic water level is below 45 meters then the borehole will be considered as "Lost or Dry" for the purposes of this tender.* Note that a stepped test can be "up" or "down" depending on whether the rate of abstraction from the well is lower or higher than the rate of inflow from the aquifer. The test should determine and identify a steady state balance of inflow and abstraction.

6.3 Recovery test will be for one hour or such time when there is at least recovery of 80% of the static water level noted at the start of the capacity test. The capacity test data and the results are presented in the standard form.

6.4 The Contractor shall have on the site a 900 V-notch weir, or a cutthroat flume or any hydraulic measuring structure preceding a tank with baffles, for the measurement of flows. Small flow (less than 0.25 liters/second) can be measured by timing the filling of a vessel of known volume per unit time. The Contractor shall also have on site an operating electric dip meter, calibrated in centimeters, and with visual/audible indicator of when the water level is reached.

6.5 Readings of flow and water level shall be taken at defined intervals; initially at half minute intervals for 5 minutes. Intervals should progressively increase to 1-minute intervals for 10 minutes, 2-minute intervals for the next 10 minutes and so on. For accurate measurement, an electrical/ sonic water level indicator with a graduated tape for taking water level readings should be used. Recovery readings shall be taken for a minimum of 1 hour, during which period airlifting or pumping equipment shall not be removed from the borehole.

6.6 **Disinfection of borehole;** The borehole should be thoroughly disinfected with a chlorine-rich solution, such as HTH, leaving a concentration of residual chlorine of 50 milligrams/ litre for at least four hours. The borehole may then be re-sealed with the locked cap or welded plate. Quantity of chlorine compound to produce a 50 mg/l solution in 20 m of water-filled casing. Each successful borehole will be chlorinated following completion of capacity testing operations. Supplier will decide on the concentration of chlorine based on the volume of water in the borehole.

6.7 **Capacity test report;** report to include the following information on the well (the well construction report, type of well and a diagram showing the well's location on the property, etc.),information on field procedures and personnel involved in the test (i.e. person responsible for the pumping test, information on the hydrogeological setting, including references to mapped aquifers, when available; pumping test information including the date of the pumping test, all data on the pump type, depth of pump and well diameter etc. The sitting report, geo survey and the capacity report will be submitted to the client.

7. WATER QUALITY TESTING

7.1 The contractor shall, in principle, make sampling and quality analysis of water from every borehole.

7.2 The water quality test should be conducted at a competent testing laboratory for the elements tabulated below.

#	Test Item	Standard
1.Physical Parameters		
1	Colour	TCU
2	Odour	Not unpleasant
3	Taste	Not unpleasant
4	Turbidity	<5 NTU
5	PH value	6.0 to 8.5
6	Electric Conductivity	3,500□S/cm
1.Biological test.		
10	Coliform Bacteria	0/100ml
11	Faecal Coliform	0/100ml

	Chemical Parameters	
1	Nitrate	100mg/l
2	Chloride	750mg/l
3	Fluoride	3mg/l
4	Sulphate	800mg/l
5	Total Hardness	800mg/l
6	Copper	2 mg/l
7	Manganese	1.5mg/l
8	Total Iron	3.0mg/l
9	Total Dissolved Solids	2000mg/l

The contractor shall, in principle, do sampling and quality analysis of water from every borehole. The water quality test should be conducted at a competent testing laboratory for the elements tabulated below.

1.0	***Physical Parameters***	***Standard***
1.	Colour	TCU
2.	Odour	Not unpleasant
3.	Taste	Not unpleasant
4.	Turbidity	≤5 NTU
5.	PH value	6.5 to 8.5
6.	Electric Conductivity	3,500μS/cm
	Biological Parameters	
7.	Coliform Bacteria	0/100ml
8.	Faecal Coliform	0/100ml
	Chemical Parameters	

9.	Chloride	250 mg/l
10.	Fluoride	1.5 mg/l
11.	Sulphate	500 mg/l
12.	Total Hardness	500 mg/ l
13.	Copper	2.0 mg/l
14.	Manganese	0.4 mg/l
15.	Total Iron	0.3 mg/l
17.	Total Dissolved Solids (TDS)	2000 mg/l
18.	Lead	0.10 mg/l
19.	Mercury	0.005 mg/l
20.	Arsenic	0.1 mg/l
21.	Cadmium	0.20 mg/l

8. STRAIGHTNESS AND VERTICALITY TEST

8.1 All boreholes shall be drilled and cased straight and vertical and all casings and screens shall be set round, plumb and true to line. Any delays encountered in running casing and screen considered to be due to poor whole alignment shall be at the Contractor's expense.

8.2 The Client may ask the Contractor to perform random tests for straightness and verticality alignment after completion of the well and before its acceptance. The Contractor shall provide the necessary 12metre section of pipe (The plumb), not more than 15 millimeters diameter less than the inside diameter of the casing. Should the plumb fail to move freely throughout the length of the casing to the required depth or should the well vary from the vertical in excess of two-thirds of the smallest inside diameter of part of the borehole being tested per 30 meters of depth, the verticality and straightness the well shall be corrected by the Contractor at his own expense. *Should the Contractor fail to correct such faulty straightness or verticality, the Client may refuse to accept the borehole and no payment for those Works and materials used.*

9. PROTECTION

9.1 During the contract period, when work is not in progress, the boreholes shall be kept capped in such a manner as to prevent the entrance of foreign materials. The Contractor shall remove any foreign matter at his own expense. On completion of each borehole, the Contractor shall supply and fit an approved permanent lock-up cap. Casing shall

terminate not less than 0.5 meters above ground level and are fitted with the approved lock-up cap.

10. ABANDONMENT

10.1 The Client shall have the right at any time during the progress of the Works to order the abandonment of the borehole. The Contractor shall thereupon remove the drilling rig, withdraw any casing and screen and salvage all such materials as the Client shall direct, and shall fill and leave the borehole to the satisfaction of the Client. In such a case client will pay all works done and materials used.

11. UNSUCCESSFUL (LOST BOREHOLES)

11.1 Lost" boreholes are either "dry" boreholes or "uncompleted" boreholes.

11.2 Dry boreholes are those:

- Having no water bearing zones/aquifers.
- Having insufficient discharge of < 1/ litre per second for mechanization. Anything less will be considered as a dry hole **for this tender**).
- A borehole that has failed verticality test.

11.3 This situation may arise with time within the ***maintenance period*** because of one or more constructional defects such as ruptured / cracked casing, sections of boreholes collapsed, heavy silting closing the screen, screen chocked; lowering the discharge, or poor sitting of borehole with no potential sustainable aquifers, drilling up to insufficient depths to tap potential sustainable aquifer. In the above case the Contractor shall either improve the discharge by appropriate well development methods or if the dynamic water level is less than 40m, lower the pump inlet with additional riser pipes and connecting rods. ***In the case of any remedial works not being effective the Contractor shall drill a new borehole at an alternative site mutually agreed with the Client***. If, after investigations, the Contractor *feels that there are no possibilities of drilling a successful borehole in the area / community*, then the Contractor can move to a new location. *This should, however, be after two failed attempts to drill the borehole in the same location.* If the contractor is unable to remove the defects, abandoned due to any other reason, then the borehole is classified as "Dry" and contractor *will not be paid or will have to refund the payment made by the client for that borehole.*

11.4 **Sampling and drill time logs**: Representative samples of the strata intersected shall be collected every one meter or less depending on the change of geological formation. Supplier shall take every possible precaution to guard against sample contamination due to poor circulation, borehole erosion, or caving. Cutting samples shall be bagged, labelled with borehole depth at time of collection, and stored in a position where they will not be contaminated by site conditions or drilling operations. Supplier shall supply strong, transparent sample bags and indelible labels as required. The contractor will also record

the drill time logs/penetration rate of each rod or at every three-meter interval. Contractor will record the depth of the borehole, a lithological log of the borehole, Borehole diameter(s) and depths of any diameter reduction, depths of water strikes (if any), penetration rate log and approximate static water level in the borehole. Supplier/Contractor will strive to measure the performance of the borehole, to determine the efficiency of the borehole, or variation of its performance under different rates of discharge and to quantify aquifer characteristics, such as transmissivity, hydraulic conductivity, and storativity.

12. CERTIFICATION for PAYMENT AND RETENTION

12.1 Upon submission of invoices, Contractor, Client and Users will confirm works performed by issuing and signing a completion certificate before payment.

12.2 The maintenance period for boreholes drilled, structures erected, equipment fitted and all civil works put in place **is 3 months**. Client will therefore **withhold 5% of value of amount invoiced** as a **retention fee for this period** to assess performance of works completed. Any defects, if solely due to Contractor's workmanship shall be rectified during this period. At the expiry of this period, Client and Contractor will confirm function and usage. After the post defect liability period and confirmation of functionality of the works done, contractor is entitled to full payment accruing from the retention fee.

13. ELIGIBILTY CRITERIA

Bidders are required to meet the following criteria to be eligible to participate in this procurement. Bidders should provide any available documentation and certify their eligibility.

a. Have the legal capacity to enter into a contract; please provide Certificate of Incorporation and any other documents to prove they have legal capacity.
b. Not be insolvent, in receivership, bankrupt or being wound up, not have had business activities suspended and not be the subject of legal proceedings for any of these circumstances.
c. Valid Tax Clearance Certificate and Valid NSSA Compliance Certificate.
d. Have fulfilled their obligations to pay taxes and social security contributions in Zimbabwe;
e. Not have a conflict of interest in relation to this procurement requirement;
f. Not be debarred from participation in public procurement under section 72 (6) of the Public Procurement And Disposal Of Public Assets Act and section 74(1) (c), (d) or (e) of the Regulations or declared ineligible under section 99 of the Act;
g. Have been registered with the Authority (PRAZ) as a Supplier and have paid the applicable Supplier Registration Fee.
h. Provide record of having successfully completed similar work (drilling and solarization) in recent years. At least three signed and stamped reference letters.
i. Demonstrate capacity to avail minimum required plant equipment for the works.
j. Indicate duration of the work in a proper work plan.

k. Indicate the price for drilling a borehole for each site and total costs of the scheduled work in the provided BOQ.

In addition to these eligibility requirements, Bidders must demonstrate that they have the qualifications, resources and experience to perform the contract to satisfactory standards.