



Tender Document

For

Drilling and Equipping of One (1) Borehole and Construction of Elevated Steel Pressed Water Tank at (MWAKISHINI)

TENDER NO. SDW/RT/004/2018-2019

**Tender Closing date: 8th May 2019
Time: 10.00 am Local time**

CONTENTS

- Invitation to Bidders
- Location of the Project Area, the Scope of work and Borehole Data
- Instructions to Bidders
- Conditions of Contract Part I and II
- Specifications
- Bills of Quantities
- Form of Tender
- Schedules
- Sample Forms
- Evaluation Criteria

TABLE OF CONTENTS

| SECTION | TITLE | PAGE No |
|---------|--|------------|
| | COVER PAGE..... | 1 |
| | TABLE OF CONTENTS..... | 2 |
| 1 | INVITATION BIDDERS..... | 3 |
| 2 | LOCATION OF THE PROJECT SITES, SCOPE OF WORK | 4 |
| 3 | FORM OF TENDER..... | 5 |
| 4 | INSTRUCTIONS TO BIDDERS..... | 6 - 17 |
| | APPENDIX TO INSTRUCTIONS TO BIDDERS..... | 18 |
| 5 | CONDITIONS OF CONTRACT PART, I AND II..... | 19 - 22 |
| | APPENDIX TO CONDITIONS OF CONTRACT..... | 23 |
| 6 | TECHNICAL SPECIFICATIONS..... | 24 - 35 |
| 7 | PREAMBLE TO AND BILLS OF QUANTITIES..... | 36 - 46 |
| 8 | BID FORMS / SCHEDULES..... | 47 - 54 |
| 9 | APPENDIX "X" - EVALUATION CRITERIA. | 55 |

NOTES

1. Transactions regarding the sample forms shall be carried out between the Employer and the firm awarded the contract.
2. The whole document should be read and understood before quoting.
3. Bidders should make their own arrangements at their own cost to visit the site and familiarize themselves with the site conditions before quoting. No excuse will be allowed for mistakes made due to not visiting the site.

SECTION 1

INVITATION TO BIDDERS

OUR REF.:

DATE:

To:[name of the firm],
.....[address]
.....
.....

DRILLING AND EQUIPPING OF ONE (1) BOREHOLE AND CONSTRUCTION OF ELEVATED STEEL PRESSED WATER TANK AT MWAKISHINI

You have been pre-qualified to quote for the above project.

We hereby invite you and other pre-qualified bidders to submit a bid for the execution and completion of the above works.

All bidding documents must be addressed to “The Principal Secretary, State Department for Wildlife P.O. Box 30126 -00100, GPO Nairobi. The bid documents shall be placed in Tender Box located NSSF Building, Bishops Road, Block ‘A’15th Floor Eastern Wing on or before **Wednesday the 8th day of May 2019 at 10.00am**. The bids will be opened immediately thereafter in the presence of the bidders’ representatives who wish to witness the opening.

Yours faithfully,
FOR: PRINCIPAL SECRETARY

SECTION 2

LOCATION OF THE PROJECT AREA, THE SCOPE OF WORK AND BOREHOLE DATA

1.1 LOCATION OF THE PROJECT AREA

The location of the project area is within MWAKISHINI Sub Location, MWAKISHINI Location, Mwatate Sub-County with the following coordinates:

- *470338E, 9575595E*
- *Elevation 1084 m*

1.2A SCOPE OF WORK

The scope of works shall include but not limited to;

- a) Drilling, Casing, Gravel packing, development and Test Pumping of 1 No: Borehole.
- b) Equipping of the Borehole. (Installation of Submersible pump and Switch gear).
- c) Construction of Elevated Steel Pressed Water Tank.
- d) All related Electrical Installation Works.
- e) All related Civil and Plumbing Works and connection to the existing Reticulation System. .

1.2B BOREHOLE DEPTH

Total Depth= 200 meters

Casing Diameter = 6 Inch (153 mm)

Anticipated yield = 20 m³/hr

SECTION 3

FORM OF TENDER

**TO: The Principal Secretary
State Department for Wildlife
P.O. Box 30126 - 00100, GPO
NAIROBI.**

TENDER No.:

In accordance with the Instructions to Bidders, Conditions of Contract, Specifications, Bills of Quantities and Drawings for the execution of the above named Works, we, the undersigned offer to construct, install and complete such Works and remedy any defects therein for the sum of **Kshs:**... .. *[Amount in figures]*,

Kenya Shillings:... .. *[Amount in words]*

1. We undertake, if our tender is accepted, to commence the Works not later than Twenty One (21) Days from the date specified in the Project Manager's notice to commence, and to complete the whole of the Works comprised in the Contract within the time specified in the Appendix to Conditions of Contract.
2. We acknowledge that the Appendix to Form of Bid forms part of our bid.
3. We agree to abide by this bid **for a period of 120 days from the date of tender opening**, and shall remain binding upon us and may be accepted at any time before the expiry of that period.
4. Unless and until a formal Agreement is prepared and executed, this bid together with your written acceptance thereof, shall constitute a binding Contract between us.
5. We understand that you are not bound to accept the lowest or any bid you may receive

Dated this **Day of****20**.....

Signature**in the capacity of;**

..... **Of**
[Name of Bidder] **[Address of Bidder]**

SECTION 4

INSTRUCTIONS TO BIDDERS

Note: The bidder must comply with the following conditions and instructions. Failure to do so will result in rejection of the bid.

1. GENERAL

DEFINITIONS

- (a). **“Bidder”** means any person or persons, partnership firm or company submitting a sum or Sums in the Bills of Quantities in accordance with the Instructions to Bidders, Conditions of Contract Parts I and II, Specifications, Drawings and Bills of Quantities for the work Contemplated, acting directly or through a legally appointed representative.
- (b). **“Approved Bidder”** means the bidder who is approved by the Employer.
- (c). Any noun or adjective derived from the word **“bid”** shall be read and construed to mean The corresponding form of the noun or adjective **“bidder”**. Any conjugation of the verb **“Bidder”** shall be read and construed to mean the corresponding form of the verb **“bid”**
- (d). **“Employer”** means a Central Government Ministry, Local Authority, State Corporation or Any other Public Institution.

2. ELIGIBILITY AND QUALIFICATION REQUIREMENTS

- 2.1. This invitation to bid is restricted to class ‘A’ licensed borehole drilling and equipping contractors by Ministry of Water and Sanitation.
- 2.2. The bidder shall be required to provide the following information;
 - (a). The qualifications and experience of key personnel proposed for administration and execution of the Contract, both on site and off site.
 - (b) Major items of construction plant and equipment proposed for use in carrying out the Contract. Only reliable plant in good working order and suitable for the work required of it shall be shown on this schedule. The bidder will also indicate on this schedule when each item will be available on the Works. Included also should be a schedule of plant, equipment and material to be imported for the purpose of the Contract, giving details of make, type, origin and CIF value as appropriate.
 - (c). Details of sub-contractors to whom it is proposed to sublet any portion of the of the Contract and for whom authority will be requested for such subletting in accordance with clause 4 of Conditions of Contract Part I (FIDIC).of the Conditions of Contract Part II.
 - (d). A draft Program of Works in the form of a bar chart and Schedule of Payment shall form part of the Contract if the tender is accepted. Any change in the Program or Schedule shall be subjected to the approval of the Engineer.
 - (e). Details of any current litigation or arbitration proceedings in which the bidder is involved as one of the parties.

2.3 JOINT VENTURES

Bidders submitted by a joint venture of two or more firms as partners shall comply with the following requirements:-

- (a). The bid, and in case of a successful bid, the Form of Agreement, shall be signed so as to be legally binding on all partners.
- (b). One of the partners shall be nominated as being in charge and this authorization shall be evidenced by submitting a Power of Attorney signed by legally authorized Signatories of all the partners.
- (c). The partner in charge shall be authorized to incur liabilities and receive instructions for and on behalf of any and all partners of the joint venture and the entire execution of the Contract including payment shall be done exclusively with the partner in charge.
- (d). All partners of the joint venture shall be liable jointly and severally for the execution of the Contract in accordance with the Contract terms, and a relevant statement to this effect shall be included in the authorization mentioned under (b) above as well as in the Form of Bid and the Form of Agreement (in case of a successful bidder).
- (e). A copy of the agreement entered into by the joint venture partners shall be submitted with the bid.

3. COST OF BIDDING

The bidder shall bear all costs associated with the preparation and submission of his bid and the Employer will in no case be responsible or liable for those costs, regardless of the conduct or outcome of the bidding process.

4. PRE-BID SITE VISIT

- 4.1** The bidder is advised to visit and examine the site and its surroundings and obtain for himself on his own responsibility, all information that may be necessary for preparing the bid and entering into a contract. The costs of visiting the Site shall be the bidder's own responsibility.
- 4.2** The bidder and any of his personnel or agents will be granted permission by the Employer to enter upon premises and lands for the purpose of such inspection, but only upon the express condition that the bidder his personnel or agents, will relieve and indemnify the Employer from and against all liability in respect of, and will be responsible for personal injury (whether fatal or otherwise), loss of or damage to property and any other loss, damage, costs and expenses however caused, which but for the exercise of such permission, would not have arisen.
- 4.4** Each bidder shall complete the Certificate of Bidder's site visit, whether he in fact visits the site.

5. BID DOCUMENTS

- 5.1 The bid documents comprise the documents listed here below and should be read together with any Addenda issued in accordance with Clause 7 of these instructions to bidders.
- a. Form of Invitation to Bidders.
 - b. Form of Tender
 - c. Instructions to bidders.
 - d. Appendix to Instructions to Bidders.
 - e. General Conditions of Contract – Part I
 - f. Conditions of Particular Application – Part II
 - g. Appendix to Conditions of Contract.
 - h. Specifications
 - i. Bills of Quantities
 - j. Equipment/items Technical data
 - k. Bid and Confidential Business Questionnaires
 - l. Schedules of Supplementary Information
- 5.2. The bidder is expected to examine carefully all instructions, conditions, forms, terms, specifications and drawings in the bid documents. Failure to comply with the requirements for bid submission will be at the bidder's own risk. Pursuant to clause 23 of Instructions to Bidders, bids which are not substantially responsive to the requirements of the tender documents will be rejected.
- 5.3. All recipients of the documents for the proposed Contract for the purpose of submitting a bid whether they submit a bid or not) shall treat the details of the documents as "private and confidential".

6. CLARIFICATION OF BID DOCUMENTS

- 6.1. A prospective bidder requiring any clarification of the bid documents may notify the Employer in writing or by telex, cable or facsimile at the Employer's mailing address indicated in the Invitation to Bid. The Employer will respond in writing to any request for clarification which he receives earlier than five (5) days prior to the deadline for the submission of bids. Written copies of the Employer's response (including the query but without identifying the source of the inquiry) will be sent to all prospective bidders who were invited to bid.

7. AMENDMENT OF BID DOCUMENTS

- 7.1. At any time prior to the deadline for submission of tenders the Employer may, for any reason, whether at his own initiative or in response to a clarification requested by a Prospective bidder, modify the tender documents by issuing Addenda.
- 7.2. Any Addendum will be notified in writing or by cable, telex or facsimile to all prospective bidders and will be binding upon them.
- 7.3. If during the period of bidding, any circular letters (bid notices) shall be issued to bidders by, or on behalf of, the Employer setting forth the interpretation to be placed on a part of the bid documents or to make any change in them, such circular letters will form part of the bid documents and it will be assumed that the bidder has taken account of them in preparing his bid. The bidder must promptly acknowledge (in writing or by cable to the Employer) any circular letters he may receive.
- 7.4. In order to allow prospective bidders reasonable time in which to take the Addendum into account in preparing their bids, the Employer may, at his discretion, extend the deadline for the submission of bids.

PREPARATION OF BIDS

8. LANGUAGE OF BID

- 8.1. The bid and all correspondence and documents relating to the bid exchanged between the bidder and the Employer shall be written in the English language. Supporting documents and printed literature furnished by the bidder with the bid may be in another language provided they are accompanied by an appropriate translation of pertinent passages in the above stated language. For the purpose of interpretation of the bid, the English language shall prevail.

9. DOCUMENTS COMPRISING THE BID

- 9.1. The bid to be prepared by the bidder shall comprise: the Form of Tender and Appendix thereto, the Priced Bills of Quantities, Schedules, the information on eligibility and qualification, and any other materials required to be completed and submitted in accordance with the Instructions to Bidders embodied in these bid documents. The Forms, Bills of Quantities and Schedules provided in the bid documents shall be used without exception [subject to extensions of the schedules in the same format and to the provisions of clause 13.2 regarding the alternative forms of Bid Surety].

10. BID PRICES

- 10.1. All the insertions made by the bidder shall be made in INK and the bidder shall clearly form the figures. The relevant space in the Form of Bid and Bills of Quantities shall be completed accordingly without interlineations or erasures except necessary to correct errors made by the bidder in which case the those erasures and interlineations shall be initialed by the person or persons signing the bid.
- 10.2. A price or rate shall be inserted by the bidder for every item in the Bills of Quantities whether the quantities are stated or not. Items against which no rate or price is

entered by the bidder will not be paid for by the Employer when executed and shall be deemed covered by the rates for other items and prices in the Bills of Quantities.

- 10.3** The prices and unit rates in the Bills of Quantities are to be the full [all-inclusive] value of the Work described under the items, including all costs and expenses which may be necessary and all general risks, liabilities and obligations set forth or implied in the documents on which the bid is based. All duties, taxes and other levies payable by the Contractor under the Contract or for any other cause as of the date 28 days prior to the deadline for submission of bids, shall be included in the rates and prices and the total Bid Price submitted by the bidder.
- 10.4** Each price or unit rate inserted in the Bills of Quantities should be a realistic estimate for completing the activity or activities described under that particular item and the bidder is advised against inserting a price or rate against any item contrary to this instruction.
- 10.5** Every rate entered in the Bills of Quantities, whether or not such rate be associated with a quantity, shall form part of the Contract. The Employer shall have the right to call for any item of work contained in the Bills of Quantities, and such items of work to be paid for at the rate entered by the bidder and it is the intention of the Employer to take full advantage of unbalanced low rates.
- 10.6** The bidder shall furnish with his bid written confirmation from his suppliers or manufacturers of basic unit rates for the supply of items listed in the Conditions of Contract Part II clause 25 where appropriate. The Employer may require the bidder to justify such rates so obtained from the suppliers or manufacturers.
- 10.8** The rates and prices quoted by the bidder are subject to adjustment during the performance of the Contract only in accordance with the provisions of the Conditions of Contract. The bidder shall complete the schedule of basic rates and shall submit with his tender such other supporting information as required under clause 25 of the Conditions of Contract Part II.

11 BID VALIDITY

- 11.1** The bid shall remain valid and open for acceptance for a period of one hundred and twenty (120) days from the specified date of bid opening or from the extended date of bid opening (in accordance with clause 7.4 here above) whichever is the later.
- 11.2** In exceptional circumstances prior to expiry of the original bid validity period, the Employer may request the bidder for a specified extension of the period of validity. The request and the responses thereto shall be made in writing or by cable, telex or facsimile.
- A bidder may refuse the request without forfeiting his Bid Security. A bidder agreeing to the request will not be required nor permitted to modify his tender, but will be required to extend the validity of his Bid Security correspondingly.

12 BID SECURITY

- 12.1** The bidder shall furnish as part of his bid, a Bid Security in the amount stated in the Appendix to Instructions to Bidders.
- 12.2** The unconditional Bid Security shall be in form of a certified cheque, a bank draft, an irrevocable letter of credit or a guarantee from a reputable Bank approved by

the Central Bank of Kenya or from an Insurance Company approved by the Public Procurement Regulatory Authority.

- 12.3 The format of the Security shall be in accordance with the sample form of Bid Security included in these bid documents. The Bid Security shall be valid for thirty (30) days beyond the Bid validity period.
- 12.4 Any bid not accompanied by an acceptable Bid Security will be rejected by the Employer as non-responsive.
- 12.5 The Bid Security of unsuccessful bidders will be returned as promptly as possible but not later than twenty one (21) days after both parties signing the Contract Agreement and after a Performance Security has been furnished by the successful bidder. The Tender Security of the successful bidder will be returned upon the bidder executing the Contract Agreement and furnishing the required Performance Security.
- 12.6 The Bid Security may be forfeited:
- (a). If a bidder withdraws his bid during the period of bid validity **OR**
 - (b). In the case of a successful bidder, if he fails, within the specified time limit;
 - (i). to sign the Contract Agreement, **OR**
 - (ii). to furnish the necessary Performance Security.

13 NO ALTERNATIVE OFFERS

- 13.1 The bidder shall submit an offer which complies fully with the requirements of the bid documents.
- 13.2 Only one bid may be submitted by each bidder either by himself or as partner in a joint venture. A bidder who submits or participates in more than one bid will be disqualified.
- 13.3 The bidder shall not attach any conditions of his own to his tender. The bid price must be based on the bid documents. The bidder is not required to present alternative construction options and he shall use without exception, the Bills of Quantities as provided, with the amendments as notified in bidder notices, if any, for the calculation of his bid price.
- Any bidder who fails to comply with this clause will be disqualified.

14 CLARIFICATIONS

- 14.1 The bidder is requested as far as possible to submit any questions in writing or by cable, to reach the Employer not later than five (5) days before the deadline for submission of bids.

15 FORMAT FOR SIGNING OF BIDS

- 15.1 The bidder shall prepare his tender as outlined in clause 9 above and mark appropriately one set "**ORIGINAL**" and the other "**COPY**".
- 15.2 The copy of the bid and Bills of Quantities shall be typed or written in indelible ink and shall be signed by a person or persons duly authorized to sign on behalf of the bidder. Proof of authorization shall be furnished in the form of the written power of attorney which shall accompany the bid. All pages of the bid where amendments have been made shall be initialed by the person or persons signing the bid.
- 15.3 The complete bid shall be without alterations, interlineations or erasures, except as necessary to correct errors made by the bidder, in which case such corrections shall be initialed by the person or persons signing the bid.

SUBMISSION OF BIDS

16 SEALING AND MARKING OF BIDS

- 16.1 The bidder shall seal the original and copy of the bid in separate envelopes, duly marking the envelopes as “ORIGINAL” and “COPY”. The envelopes shall then be sealed in an outer separate envelope.
- 16.2 The inner and outer envelopes shall be addressed to the Employer at the address stated in the Appendix to Instructions to Bidders and bear the name and identification of the Contract stated in the said Appendix with a warning not to open before the date and time for opening of bids stated in the said Appendix.
- 16.3 The inner envelopes shall each be indicated the name and address of the bidder to enable the bid to be returned unopened in case it is declared “late”, while the outer envelope shall bear no mark indicating the identity of the bidder.
- 16.4 If the outer envelope is not sealed and marked as instructed above, the Employer will assume no responsibility for the misplacement or premature opening of the bid. A bid opened prematurely for this cause will be rejected by the Employer and returned to the bidder.

17 DEADLINE FOR SUBMISSION OF BIDS

- 17.1 Bids must be received by the Employer at the address specified in clause 17.2 and on the date and time specified in the Letter of Invitation, subject to the provisions of clause 7.4, 18.2 and 18.3. Bids delivered by hand must be placed in the Tender Box as stated in the “Form of Invitation to Bid” provided in the office of the Employer. Proof of posting will not be accepted as proof of delivery and any bid delivered after the above stipulated time, from whatever cause arising will not be considered.
- 17.2 The Employer may, at his discretion, extend the deadline for the submission of bids through the issue of an Addendum in accordance with clause 7, in which case all rights and obligations of the Employer and the bids previously subject to the original deadline shall thereafter be subject to the new deadline as extended.
- 17.3 Any bid received by the Employer after the prescribed deadline for submission of bid will be returned unopened to the bidder.

18 MODIFICATION AND WITHDRAWAL OF BIDS

- 18.1 The bidder may modify or withdraw his bid after bid submission, provided that written notice of the modification or withdrawal is received by the Employer prior to prescribe deadline for submission of bids.
- 18.2 The bidder’s modification or withdrawal notice shall be prepared, sealed, marked and dispatched in accordance with the provisions for the submission of bids, with the inner and outer envelopes additionally marked “MODIFICATION” or “WITHDRAWAL” as appropriate.
- 18.3 No bid may be modified subsequent to the deadline for submission of bids.
- 18.4 No bid may be withdrawn in the interval between the deadline for submission of bids and the period of bid validity specified on the bid form. Withdrawal of a bid during this interval will result in the forfeiture of the Bid Surety.
- 18.5 Subsequent to the expiration of the period of bid validity prescribed by the Employer, and the bidder having not been notified by the Employer of the award

of the Contract or the bidder does not intend to conform with the request of the Employer to extend the tender validity, the bidder may withdraw his bid without risk of forfeiture of the Bid Surety.

BID OPENING AND EVALUATION

19 BID OPENING

- 19.1 The Employer will open the bids in the presence of the bidders' representatives who choose to attend at the time and location indicated in the Letter of Invitation to Bidders. The bidders' representatives who are present shall sign a register evidencing their attendance.
- 19.2 Bids for which an acceptable notice of withdrawal has been submitted, pursuant to clause 19, will not be opened. The Employer will examine the bids to determine whether they are complete, whether the requisite Bid Sureties have been furnished, whether the documents have been properly signed and whether the bids are generally in order.
- 19.3 At the bid opening, the Employer will announce the bidder's names, total bid price, bid price modifications and bid withdrawals, if any, the presence of the requisite Bid Surety and such other details as the Employer, at his discretion, may consider appropriate. No bid shall be rejected at the bid opening except for late bids.
- 19.4 The Employer shall prepare minutes of the bid opening including the information disclosed to those present.
- 19.5 Bids not opened and read out at bid opening shall not be considered further for evaluation, irrespective of the circumstances.

20 PROCESS TO BE CONFIDENTIAL

- 20.1 After the public opening of bids, information relating to the examination, clarification, evaluation and comparisons of bids and recommendations concerning the award of Contract shall not be disclosed to bidders or other persons not officially concerned with such process until the award of Contract is announced.
- 20.2 Any effort by a bidder to influence the Employer in the process of examination, evaluation and comparison of bids and decisions concerning award of Contract may result in the rejection of the bidder's bid.

21 CLARIFICATION OF BIDS

- 21.1 To assist in the examination, evaluation and comparison of bids, the Employer may ask bidders individually for clarification of their bids, including breakdown of unit prices. The request for clarification and the response shall be in writing or by cable, facsimile or telex, but no change in the price or substance of the bid shall be sought, offered or permitted except as required to confirm the correction of arithmetical errors discovered by the employer during the evaluation of the bids in accordance with clause 24.
- 21.2 No bidder shall contact the Employer on any matter relating to his bid from the time of the bid opening to the time the Contract is awarded. If the bidder wishes to bring additional information to the notice of the Employer, he shall do so in writing.

22 DETERMINATION OF RESPONSIVENESS

- 22.1** Prior to the detailed evaluation of bids the Employer will determine whether each bid is substantially responsive to the requirements of the bid documents.
- 22.2** For the purpose of this clause, a substantially responsive bid is one which conforms to all the terms, conditions and specifications of the bid documents without material deviation or reservation and has a valid Bid Surety Bank Guarantee. A material deviation or reservation is one which affects in any substantial way the scope, quality, completion timing or administration of the Works to be undertaken by the bidder under the Contract, or which limits in any substantial way, inconsistent with the bid documents, the Employer's rights or the bidder's obligations under the Contract and the rectification of which would affect unfairly the competitive position of other bidders who have presented substantially responsive bids.
- 22.3** Each price or unit rate inserted in the Bills of Quantities shall be a realistic estimate of the cost of completing the works described under the particular item including allowance for overheads, profits and the like. Should a bid be seriously unbalanced in relation to the Employer's estimate of the works to be performed under any item or groups of items, the bid shall be deemed not responsive.
- 22.4** A bid determined to be not substantially responsive will be rejected by the Employer and may not subsequently be made responsive by the bidder by correction of the non-conforming deviation or reservation.

23 CORRECTION OF ERRORS

- 23.1** Bids determined to be substantially responsive shall be checked by the Employer for any arithmetic errors in the computations and summations. Errors will be corrected by the Employer as follows:
- (a).** Where there is a discrepancy between the amount in figures and the amount in words, the amount in words will govern.
 - (b).** In the event of a discrepancy between the bid amount as stated in the Form of tender and the bid figure in the main summary of the Bills of Quantities, the amount as stated in the Form of tender shall prevail.
 - (c).** The Error Correction Factor shall be computed by expressing the difference between the bid amount and the bid sum as a percentage of the corrected contracts works (i.e. corrected bid sum less P.C. and Provisional Sums).
 - (d).** The Error Correction Factor shall be applied to all contract works (as a rebate or addition as the case may be) for the purposes of valuations for Interim Certificates and valuations of variations.

24 EVALUATION AND COMPARISON OF BIDS

- 24.1** The Employer will evaluate only bids determined to be substantially responsive to the requirements of the bid documents in accordance with clause 23.
- 24.2** The Employer reserves the right to reject any variation, deviation or alternative offer. Price adjustment provisions in the Conditions of Contract applied over the period of execution of the Contract shall not be taken into account in bid evaluation.
- 24.3** If the lowest evaluated bid is seriously unbalanced or front loaded in relation to the Employer's estimate of the items of work to be performed under the contract, the

Employer may require the bidder to produce detailed price analyses for any or all items of the Bills of Quantities, to demonstrate the relationship between those prices, proposed construction methods and schedules. After evaluation of the price analyses, the Employer may require that the amount of the Performance Security set forth in clause 27 be increased at the expense of the successful bidder to a level sufficient to protect the Employer against financial loss in the event of subsequent default of the successful bidder under the Contract.

24.4 EVALUATION CRITERIA

In carrying out the evaluation, the following factors will be considered;

- [a] Performance of the equipment and machinery.
- [b] Quality of the equipment and machinery.
- [c] Capacity and experience of the bidder.
- [d] The Contract Sum
- [e] The project completion period.

Please ref. Evaluation Criteria at APPENDIX "X".

AWARD OF CONTRACT

25 AWARD

25.1 Subject to Sub-clause 27.2, the Employer will award the Contract to the bidder whose bid is determined to be substantially responsive to the bid documents and who has offered the lowest evaluated bid price subject to possessing the capability and resources to effectively carry out the Contract Works as required in Sub-clause 2.1 and 2.2 here above.

25.2 The Employer reserves the right to accept or reject any bid, annul the bidding process and reject all bids, at any time prior to award of Contract, without there by incurring any liability to the affected bidders or any obligation to inform the affected bidders of the grounds for the Employer's action.

26 NOTIFICATION OF AWARD

26.1 Prior to the expiration of the period of bid validity prescribed by the Employer, the Employer will notify the successful bidder by cable, tele-fax or telex and confirmed in writing by registered letter that his bid has been accepted. This letter (hereinafter and in all Contract documents called "Letter of Acceptance" shall name the Sum (hereinafter and in all Contract documents called "the Contract Price") which the Employer will pay to the Contractor in consideration of the execution and completion of the Works as prescribed by the Contract.

26.2 Notification of award will constitute the formation of the Contract.

26.3 Upon the furnishing of a Performance Security by the successful bidder, the unsuccessful bidders will promptly be notified by the Employer in writing or by cable that their bids have been unsuccessful.

- 26.4 Within Fourteen [14] days of receipt of the Form of Contract Agreement from the Employer, the successful bidder shall sign the Form of Contract Agreement and return it to the Employer together with the required Performance Security.

27 PERFORMANCE GUARANTEE

- 27.1 Within Twenty One [21] days of receipt of the notification of award from the Employer, the successful bidder shall furnish the Employer with a Performance Security in the amount **equivalent to 20% of the bid amount**.
- 27.2 The Performance Security to be provided by the successful bidder shall be an unconditional Bank Guarantee issued at the bidder's option by a reputable Bank located in the Republic of Kenya. Failure of the successful bidder to submit the required Performance Security shall constitute a breach of Contract and sufficient grounds for the annulment of the award and forfeiture of the Bid Security and any other remedy under the Contract. The Employer may award the Contract to the next ranked bidder.

28 TERMS OF PAYMENT

28.1. ADVANCE PAYMENT

The clause is not applicable in this Project

29 CORRUPT AND FRAUDULENT PRACTICES

Any efforts by the bidder to influence the procurement entity in its decision on bid evaluation, bid comparison or contract award will result in the rejection of the bidder's offer. The procurement entity therefore requires that bidders observe the highest standards of ethics during the procurement process and execution of the contract. In pursuance of policy, the procurement entity;

- (a). Defines, for the purposes of this provision, the terms set forth below as follows:

(i). **"Corrupt practice"** means the offering, giving, receiving or soliciting of anything of value to influence the action of a public official in the procurement process or in contract execution.

(ii). **"Fraudulent practice"** means a misrepresentation of facts in order to influence a procurement process or execution of a contract to the detriment of the procurement entity and includes collusive practice among bidders (prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive the procurement entity of the benefits of free and open competition.

- (b). Will reject a proposal for award if it determines that the bidder recommended for award has engaged in corrupt or fraudulent practices in competing for the contract in question.
- (c). Will declare a firm ineligible, either indefinitely or for a stated period of time, to be awarded any contract if it at any time determines that the firm has engaged in corrupt or fraudulent practices in competing or in executing a contract.

30. **PROCURING ENTITY'S RIGHT TO ACCEPT ANY TENDER AND TO REJECT ANY OR ALL TENDERS**

The Procuring Entity reserves the right to accept or reject any Tender, and to cancel the Tendering process and reject all Tenders, at any time prior to the award of Contract, without thereby incurring any liability to the affected Tenderer or Tenderers

APPENDIX TO INSTRUCTIONS TO BIDDERS

CLAUSE

13.1“ Amount of Bid Surety shall be Ksh. 100,000

17.2 The name and address of the Employer for the purposes of submission of tenders is:

**The Principal Secretary
State Department for Wildlife
P. O. Box 30126 - 00100, GPO, Nairobi.**

TERMS OF PAYMENT

There will be no advance payment.

30.1 First payment and subsequent certificates shall be raised for payment only after successful completion of various stages of measured works and testing of the system.

30.2 Unless otherwise stated, 10% retention money and 16% VAT shall be deducted from the payment.

30.3 The 10% retention money shall be released at the end of the Defects Liability Period (6 months).

SECTION 5

CONDITIONS OF CONTRACT

I. CONDITIONS OF CONTRACT, PART I - GENERAL CONDITIONS

The Conditions of Contract, Part I - General Conditions, shall be those forming Part I of the "Conditions of Contract for works of Civil Engineering Construction, Fourth Edition 1987, re-printed in 1992 with further amendments, prepared by the Federation Internationale des Ingenieurs - Conseils (FIDIC). The Conditions are subject to variations and additions set out in Part II hereof entitled "Conditions of Contract, Part II - Conditions of Particular Application".

NOTE

- i. The standard text of the General Conditions of Contract must be retained intact to facilitate its reading and interpretation by bidders. Any amendments and additions to the General Conditions, specific to a given Contract, should be introduced in the Conditions of Particular Application or in the Appendix to Conditions of Contract.
- ii The Conditions of Particular Application take precedence over the General Conditions of Contract.
- iii Copies of the FIDIC Conditions of Contract can be obtained from:
FIDIC Secretariat P. O. Box 86
1000 Lausanne 12, Switzerland
Fax: 41 21 653 5432
Telephone: 41 21 653 5003

II. CONDITIONS OF CONTRACT PART II - CONDITIONS OF PARTICULAR APPLICATION

GENERAL

The Conditions of Contract Part II - Conditions of Particular Application, modify and compliment like-numbered clauses in the Conditions of Contract Part I - General Conditions. Both Parts shall be read together, with the Conditions of Particular Application prevailing in case of conflict or discrepancy. Clauses of the General Conditions not specifically modified and supplemented shall remain in effect.

CLAUSE No. DESCRIPTION

DEFINITIONS AND INTERPRITATIONS

In this contract document, except where the context otherwise requires, the following terms and expressions shall have the following meanings:

1.1 (a) (i) "Employer" *The Principal Secretary, State Department for Wildlife
P. O. Box 30126– 00100, GPO,
Nairobi.*

(ii) "Project Manager" or "Engineer" *Director Water Resources Management
P.O. BOX 49720-00100
Nairobi.*

(iii) "Employer's Representative" *This shall mean the Project Manager*

b (i) Insert in line 2 after " the bills of quantities", the following words " the rates entered by the Contractor (whether or not such rate be employed in computation of the Contract Price)"

Project Manager's Duties and Authority

- 2.1 (b).** The Project Manager shall obtain specific approval of the Employer before taking any of the following actions specified in Part I:
- (i). Consenting to the sub-letting of any part of the Works under Clause 4.
 - (ii). Certifying additional cost determined under Clause 12.
 - (iii). Determining an extension of time under Clause 44.
 - (iv). Issuing a variation under Clause 51 except in an emergency situation as reasonably determined by the Project Manager.
 - (v). Fixing rates or prices under clause 52

CONTRACT DOCUMENTS

5.1 (a) the language governing this Contract shall be English. Communication between the Contractor and Project Manager or Project Manager's Representative shall be in English.

5.1 (b) The Contract shall in all respects be construed in accordance with and subject to the Laws of Kenya.

5.2 PRIORITY OF CONTRACT DOCUMENTS

- 1) The Contract Agreement.
- 2) Letters of Acceptance.
- 3) The said Bid and Appendices thereto.
- 4) The Conditions of Contract Part II.
- 5) The Conditions of Contract Part I (FIDIC).
- 6) Specifications
- 7) The priced Bills of Quantities
- 8) Schedules and other documents forming part of the Contract

GENERAL OBLIGATIONS

8.1 CONTRACTOR'S GENERAL RESPONSIBILITIES

"The Contractor shall with due care and diligence execute and complete the Works and remedy any defects therein in accordance with the provisions of the contract".

14.1 PROGRAMME TO BE SUBMITTED

The Contractor shall submit to the Project Manager for approval within Seven (7) days after receiving the Project Manager's Letter to Commence Work, **4 copies** of a detailed Works Program. The work program shall be arranged in the form of a Time-Bar chart OR schedule.

a. FAILURE TO PROVIDE THE WORKS PROGRAMME OR REVISION THEREOF

If the Contractor fails to submit a satisfactory works program or revisions thereof within Seven (7) days after such a program or revision thereof is due in accordance with clause 14.1, the Project Manager shall **with- hold certification** of any payment until when the program or revision thereof is submitted.

36.1 QUALITY OF MATERIALS, PLANT/EQUIPMENT AND WORKMANSHIP

All materials, equipment, etc. to be used in the execution of the work by the Contractor in this contract shall conform to the requirements of the latest Kenya Bureau of Standard (KEBS), International Standards Organization (ISO), British Standards Specifications (BSS), or other approved standards applicable in Kenya unless otherwise specifically stated". The materials and workmanship shall be of the best of their respective and shall be to the approval of the Project Manager. Should any material/equipment which are in the judgment of the Project Manager unsound, or of inferior quality or in any way unsuited for the works in which it is proposed for use, such material/equipment shall not be used upon the works and shall forthwith be removed from the site and replaced with the proper quality items to the approval of the Project Manager **all at the expense of the contractor**. The contractor shall remove and reconstruct **at his own expense** any portion of the works which gives evidence of any defects or injury which may affect the strength of durability of the works or the performance of the system.

48.1 TAKE OVER OF THE WORKS

The contract work shall be considered satisfactorily complete and ready for handing over to the Employer only when the contract work and supporting services have been tested and operational to the satisfaction of the Project Manager

49.1 DEFECTS LIABILITY PERIOD

The Defects Liability Period shall be One Hundred EightyThree (183) days. The Defects Liability Period shall start after issuance of Substantial Completion or Take-Over Certificate. During this period, the contractor shall make good all the defects communicated to him/her in writing by the Project Manager within Thirty (30) days after the system hand over, and thereof during this period.

CERTIFICATES AND PAYMENTS

60.1 In accordance with clause 30 - TERMS OF PAYMENT as stipulated under Appendix to Instructions to Bidders”.

SITE MEETINGS

Site meetings shall be held after every ten (10) days or whenever called upon to discuss the progress of work Etc. The meetings may also be called at any other time at the request of the Contractor, Client or as directed by the Project Manager.

The attendance shall comprise of but not limited to:

1. The Employer
2. The Project Manager
3. The Contractor

APPENDIX TO CONDITIONS OF CONTRACT PART II

CLAUSE No.CONDITION OF CONTRACT

10, 60 Performance Security: *10% of the Contract Sum.*

14.1 Work Program Submission:*The Contractor shall submit revised work program for the works within seven (7) days of the award.*

The amount to be withheld for late submission of an **updated program** is **1.0%**

23 The minimum Third Party insurance: **Kshs 200,000.00**

43.1 ProjectCompletion Period: ***..... Days (Bidder to insert).**

47.1 Liquidated and Ascertained Damages: *0.01% of the Contract sum each Day*

49.1 Defects Liability Period: *183 days*

60.1 Advance Payment: *No advance payment shall be granted*

60.2 First payment and subsequent certificates shall be raised for payment only after successful completion of various stages of measured works and testing of the system to the satisfaction of the Project Manager,*less 16% VAT and 10% retention money.*

60.2 Time within which Payment shall be made **30 days** upon submission of payment certificate.

67Appointer of the Arbitrator:**Chairman of the Institution of Engineers of Kenya.**

NOTE: Space marked * Must be filled by the bidder

Signature....., Date: Name:,

in the capacity of....., duly authorized to sign tenders for and on behalf of.....

(IN BLOCK LETTERS)

Witness

Signature: Date:

Name: Address:

SECTION 6

TECHNICAL SPECIFICATIONS

1. BOREHOLE DRILLING

1.1 GENERAL

Wherever reference is made in the Contract to specific standards and codes to be met by the goods and materials to be furnished, and work performed or tested, the provisions of the latest current edition or revision of the relevant standards and codes in effect shall apply, unless otherwise expressly stated in the Contract. Where such standards and codes are national, or relate to a particular country or region, other authoritative standards that ensure a substantially equal or higher quality than the standards and codes specified will be accepted subject to the Project Manager's prior review and written consent. This contract comprises the drilling, construction, development; test pumping, water quality analysis and erection of a gantry. The drill sites are indicated in the zone allocation list.

1.2 REGULATIONS AND STANDARDS

The borehole shall be drilled at the site to be identified by the Project Manager. Each borehole shall be drilled to a depth specified in the hydro-geological survey report. It shall be drilled through all strata encountered. The Employer will acquire the relevant permits and Government authorizations.

1.3 MOBILIZATION, DEMOBILIZATION AND RESTITUTION

- 1.2.1 The Contractor shall mobilize to the site in accordance with the Agreed Program. The sum for mobilization/demobilization shall include transportation of machinery, erection, dismantling and preparation of temporary camps as the Contractor deems necessary, provision of drilling and development fluids (bentonite, foam, and water), water for camping, personnel sanitary facilities.
- 1.2.2 The Contractor shall minimize disturbance to neighboring plots. This shall particularly include ensuring that bailed fines and pumped test water are discharged in a manner that does not create a nuisance either to the public or private property.
- 1.2.3 Site re-instatement under the conditions of contract shall include the removal of all hydrocarbons spilled, leaked or otherwise released and associated packaging and cotton waste. Site re-instatement is deemed an integral part of mobilization. This activity shall be costed taking into account the items above and expressed as a lump sum.

1.3. DRILLING

- 1.3.1 Unless otherwise approved by the Project Manager, drilling shall be by the air hammer method, by flush rotary drilling or by the percussion method. Drilling shall continue through all strata encountered. Drilling fluids and additives used must be approved by the Project Manager prior to use. The Contractor shall provide the

appropriate tools and equipment and maintain them in good condition capable of operating to the manufacturer's rating to ensure a smooth, a smooth, straight hole.

- 1.3.2 Drilling shall continue to the stipulated total depth at a minimum diameter of 185mm (8 inches) to provide for a finished borehole of a cased internal diameter of 152mm after allowing for 50mm thick gravel pack and temporary casings as found necessary. The Project Manager reserves the right to stop drilling operation if he considers that further drilling is unlikely to be advantageous. In this event payment shall only be made for the amount of work actually executed.
- 1.3.3 All materials used in the borehole construction other than temporary works shall comply with the relevant standard specifications. A tolerance in dimensions will be permitted provided that the material quality is not inferior to specification and work is in no way impaired.
- 1.3.4 The boreholes shall be drilled straight and vertical.

1.4 SAMPLE COLLECTION, STORAGE AND RECORD KEEPING

- 1.4.1 **Samples** of the drill cuttings returned to the surface shall be collected at two (2) meter intervals, dried and bagged. Each bag shall be clearly marked with the sample depth interval and borehole number. The Contractor shall record the depth and any zone of lost circulation for which no sample was taken.
- 1.4.2 The Contractor shall maintain a log of the penetration rate on a meter by meter basis, in minutes per meter drilled. A stopwatch shall be used for this purpose so that only the net drilling time is recorded, excluding any time taken in drilling disruptions.
- 1.4.3 The depth of any voids, or of particular rapid penetration, or significant changes in rig noise shall also be noted.
- 1.4.4 Water level shall be measured and recorded at the start and end of every shift, after significant breaks in activity (such as meal breaks), and during periods of plant downtime (as appropriate). The water levels shall be measured using a sounding and/or lighting dipper approved for use by the Project Manager.

1.5 SUPPLY AND INSTALLATION OF CASINGS AND SCREENS

1.5.1 CASING AND SCREEN SPECIFICATIONS

- a). Casings shall be new, 152mm (6 inches) internal diameter, black pipe class B, with a minimum wall thickness of 4.0mm in 6 meter lengths.
- b). Mill slotted screens shall be constructed from new 152mm internal diameter black pipe class B with a minimum wall thickness of 4.0mm. Slots shall not exceed 1.0 mm in width, and should constitute not less than 6.0% open space area. Gas slotted casing screens are not acceptable.

1.5.2 CASINGS AND SCREEN INSTALLATION

- a). Before installation of the casings and screens, the Contractor shall ensure that the hole is clear to the total depth and shall flush out any backfilled materials present. The Project Manager shall provide the design of the casings and screens string prior to installation by the Contractor.

- b). Casing jointing shall be by either flush square-section threading or tree pass electric arc welding. Screens may be welded to casing, or screw-jointed by means of flush square-section threads. Externally socket joints may be welded to the casing, or screw-jointed by means of flush square-section threads. Externally socket joints will not be accepted. Where screwed joints are deemed by the Project Manager to be below standard, joint shoulders shall be spot welded at 900mm interval around the casing circumference at no extra cost. If screens and casing are to be welded, the appropriate welding electrode must be used.
- c). during welding, casing and screen lengths must be held absolutely vertical in order to ensure a plumb installation. All joints to be welded must be beveled at the butt end; three continuous weld passes must be made to ensure a sound joint and the oxide coating be removed before the second and third passes.
- d). Burn-through and subsequent deposition of metal on the inside of the casings and screens must be avoided. The base of the casing shall be sealed, unless otherwise directed by the Project Manager, with a circular plate of black pipe class B of thickness not less than 4.0mm (1/4 inch) fixed with a continuous weld to the casing strip. The appropriate welding electrode shall be used. The weld passes will be made, with oxide coating removed prior to the second and third passes. The top of the casing straight shall terminate not less than 600mm above the highest recorded level of ground at the site.
- e). the contractor shall be responsible for the provision of temporary casings as necessary, including the insertion and removal. Where the Project Manager deems it necessary to have temporary casings left in the borehole as a measure of securing the borehole, this will be indicated in the item for other works in the bill of quantity.

1.5.3 ADMISSIBLE RATES

- a) Rates shall be expressed as supply and installation of casing or screen per Unit Linear Meter and installation of gravel pack per Unit Cubic Meter.

1.6 SUPPLY AND INSTALLATION OF GRAVEL PACK

1.6.1 SPECIFICATIONS

- a). The Contractor shall supply and install filter pack/formation stabilizer. The material shall be 2-4 mm diameter, clean well rounded riverbed siliceous gravel with no more than 5.0% non-siliceous materials. The pack must be approved by the Project Manager prior to installation. Granular calcium hypochlorite will be introduced into the annular space along the pack material at a concentration of 500 grams per cubic meter of pack the gravel pack shall be placed in the production boreholes to a thickness of 50mm around the casing up-to where all screen zones are covered with the gravel as per the Project Manager's satisfaction. This will initiate the process of sterilizing the wellbore. The Contractor shall provide the Project Manager with the bulk density of the pack material (Kg/M³).
- b). Installation of the filter pack/formation stabilizer may be water wash down or reverse circulation methods. In the latter case a pump set or airlift string shall be installed in the bore so as to encourage material settlement. The filter pack shall terminate not less than 3.0 meters above the uppermost screen when stabilized, or as otherwise directed by the Project Manager. The Contractor shall provide a means by which this level shall be measured.

1.7 INSTALLATION OF BACKFILL

1.7.1 SPECIFICATIONS

- a). Backfill material shall comprise of fine clayey drill cuttings and shall be installed from the top of the filter pack to 3.0 meters below ground level unless otherwise directed by the Project Manager. The installation method must ensure that no bridging occurs within the annular space.
- b). The Contractor shall measure the depth to the top of the backfill and provide the means by which this level may be measured.

1.7.2 ADMISSIBLE RATES

Rates shall be expressed as installation of backfill per Unit Linear Metre.

1.8 DEVELOPMENT

Development shall comprise both Physical and Chemical development, and shall include the following operations:-

1.8.1 BOREHOLE CLEANING

- a). The Contractor shall clean the borehole to its “completed depth” using any of the methods listed below or as otherwise authorized by the Project Manager:-
 - By bailer with percussion drilling rig
 - By means of airlift, which may use light or stable foam to assist in the removal of materials from the borehole.
 - By means of educator airlift, with or without light or stable foam.
- b). Bailers and other down hole plant shall adopt diameter limits of half a normal size or smaller (12.5mm or ½ inch) than the smallest casing or screen diameter.
- c). Water levels shall be measured and recorded at the start and end of every shift, at significant breaks in activity (such as meal breaks), and during periods of plant downtime (as appropriate). Water levels be measured using a sounding and/or lighting dipper previously approved by the Project Manager.
- d). The borehole shall be deemed clean when measured drilled depth has been reached and when insignificant or no materials is removed from the base of the borehole. Cleaning costs shall be expressed as a rate Per Hour.

1.8.2 CHEMICAL DEVELOPMENT

- a). When the Project Manager has deemed the borehole clean; he may instruct the Contractor to commence with Chemical development. Chemical development shall comprise of an approved Polyphosphate as a des-aggregate that shall break down the silty concentrations, any buildup clay or silts, or other fine materials within and adjacent to the borehole. The decision as whether chemical development shall be adopted and what dosage rates shall be made by the Project Manager.
- b). Typical dosage shall comprise of powdered Sodium Hex-ametaphosphate dissolve in hot water. The polyphosphate shall be dosed at 10 to 15 Kg/m³ of water depending on the concentration of clays in the aquifer matrix. This shall be mixed with calcium hypochlorite at a dose of 180grammes per cubic meter to inhibit

- bacteria activity. The volume of polyphosphate dosed water shall be one and a half times the Volume of water within the screen section
- c) Both polyphosphate and added water shall be introduced by means of a pipe, the bottom end of that shall be located in the middle of the screen section of the borehole. The Contractor may get the liquids into the screened section using a jetting head if he wishes.
 - d). After dosing, the borehole shall be left overnight to allow disaggregation to occur. The borehole shall then be subject to physical development.
 - e). Chemical development costs shall be expressed as an Hour rate, and include all labor and materials (including clean water) required for the operation. Chemical development undertaken by a Contractor familiar with the technique shall take no longer than three (3) hours.

1.8.3 PHYSICAL DEVELOPMENT

- a). Physical development may adopt any of the commonly used methods, including but not necessarily restricted to the following:-
 - Surging
 - Bailing
 - High Velocity Water Jetting
 - Airlift raw hiding and Airlift raw hiding with educator pipe.
- b). Development shall be considered complete when the water discharged is clear and contains no more than an estimated 5 parts per million of suspended solids and the borehole has been restored to the cleaned total depth or as otherwise directed by the Project Manager.
- c) The Contractor shall describe the method he proposes to adopt and the plant required for physical development in his method statement. **Over pumping** shall not be considered a development method. The rate submitted by the Contractor for physical development is deemed to include installation and removal of necessary plant. The quantities given in the bills of quantities only apply to actual development time. Costs for physical development shall be expressed as an Hour Rate.

1.9 AQUIFER TESTING

Borehole testing will be conducted according to British Standard BS 6274 (1792) (Code of Practice for Test Pumping of Water Wells). The following elements are required.

- A pre-test
- A step drawdown test
- A constant discharge test
- A recovery test

1.9.1 INSTALLATION, PLANT AND METHODOLOGY

Pumping plant and dipping tube shall be installed in the borehole to be tested. The Contractor shall investigate and agree with the Project Manager the anticipated discharge and pump intake depth.

- a) **PUMPING PLANT**

- i) Pumps used for test pumping may electrical submersible or surface-mounted turbine pumps or reciprocating pumps.
- ii). Any pump used in tests must have a fully functioning **non-return valve** either in the pump itself or in the rising main immediately above the top of the pump.
- iii) The Contractor must have pumps covering the anticipated discharge range.
- iv) The water pumped from the borehole shall be discharged to waste at a distance and in such a manner that it does not pond or flow back towards the borehole.
- v). The Contractor must provide a generator or other prime mover for powering the pump, as power is not necessarily available at the sites.

b) **DISCHARGE MEASUREMENT AND CONTROL**

Discharge measurements shall be by an approved accurate method, such as an Orifice Plate, calibrated flow meter or a V-notch weir. If volumetric methods are proposed, the Contractor will ensure the container to be used has been calibrated. When time to fill measurements is made, each discharge measurement shall be calculated from the average of three time measurements. Discharge shall vary by no more than 15% across each step of step drawdown test, and across the constant discharge test.

c) **WATER LEVEL MEASUREMENT**

Water level measurements shall be by electric sounding and/or lighting dipper, and shall be made in a dipper tube installed alongside the test pump rising main and tied securely to it. The Project Manager will check the dipper for stretch and any other inaccuracies prior to accepting its use. Accuracy measurements must not be less than 1.0 cm. Water level measurements using an air line will not be acceptable on the grounds of poor precision.

d) **TIME MEASUREMENT**

All times shall be measured by means of a stopwatch. The Contractor shall ensure that spare batteries etc.... for all equipment are available prior to commencing tests.

i) **PRE-TEST**

The pre-test will check all equipment, determine the range of discharge for the step drawdown test and set the globe values for the first step discharge rate. Pre-test shall not exceed three (3).

ii) **STEP DRAWDOWN TEST**

- The step drawdown test will comprise five (5) steps tests of sixty (60) minutes each, with no recovery phase between successive steps. The step drawdown test shall not start until water level has returned to the true static water level, unless otherwise directed by the Project Manager.
- Typically, individual step discharges would comprise 25%, 50%, 75%, 100% and 125% of the anticipated production discharge rate.
- Discharge increments shall be effected as nearly instantaneously as possible and once set shall not be changed except by instruction of the Project Manager.

- Discharge variations and measurement shall be effected by means of the globe valve and manometer gauge as follows;
A globe valve of suitable diameter shall control the discharge and on the upstream side of this, not closer than six (6) pipe diameters from the valve, a manometer tapping and gauge will be installed such that it can be clearly seen by any person using the valve. This will be used during the step drawdown tests for the flow control purposes.

iii) **CONSTANT DISCHARGE TEST**

Constant discharge test shall typically last not less than twenty four (24) hours, or as otherwise determined by the Project Manager. A water sample will be procured towards the end of the test for subsequent analysis by a competent laboratory.

iv) **RECOVERY TEST AND REMOVAL OF PLANT**

Recovery tests shall not continue for more than twenty four (24) hours, or as otherwise directed by the Project Manager. Only after the completion of recovery data collection may pumping and ancillary plant be removed from the borehole, though above ground components may be dismantled during the recovering phase.

v) **ADMISSIBLE RATES**

Rates of pumping and recovery are deemed to include the cost of plant installation and removal. The rates are deemed inclusive of installation, removal, plant use, testing and data collection.

1.10 WATER SAMPLING AND ANALYSIS

- In the closing hour of the constant discharge test a water sample shall be collected for chemical and bacteriological analysis by a competent laboratory. The water samples shall be collected in containers supplied by the laboratory, in the manner conventionally used by the laboratory.
- The Contractor's unit rate of sampling and analysis will include the cost of analysis and transportation to and from the laboratory for the sampling exercise.

1.11 BOREHOLE DISINFECTION

After removal of test equipment, the borehole shall be disinfected with Chlorine/water solution at a concentration of 50 mg/l or greater of free chlorine. This will be sprayed into the borehole so as to ensure that all exposed borehole wall surfaces are coated. In preparing their Bids, Contractors should allow for 1 m³ of solution per borehole. This item shall be costed as a unit Lump Sum.

1.12 BOREHOLE HEAD WORKS

a) **SANITARY SEAL CASING**

A sanitary seal shall be constructed at the wellhead. This shall comprise the following elements:

- A 3.2 meter length of internal diameter 185 mm (8 inch) plain black pipe class B sanitary steel casing installed around the permanent casing string.
- A grout seal between the 254mm sanitary seal casing and the 152 mm permanent casing string.
- A 1.0x1.0x1.0 meter reinforced concrete block (Y8/1:2:4) cast around the Sanitary seal casings c/w lockable steel cap.

b) **GROUT SEAL**

A sanitary ground seal shall be installed between the 152 mm (6 inch) and 185 mm (8 inch) casings and grouted into place. Grout shall be a cement slurry, or cement and fine sand and shall have a density of at least 1155 Kg/lt. This shall be introduced into the annular space from the top of the inert backfill to the ground level, using a method that must be approved by the Project Manager.

b)

c) **CONCRETE PLINTH**

The ground surface at the wellhead shall be excavated to a depth of one (1) meter, and be one meter square, to allow s Concrete Plinth to be cast. The 1.0x1.0x1.0 meter pit will be filled with concrete, to be finished flush with the ground surface. Concrete shall be 1:2:4 OPC: sand: half-inch ballast. This must be cast with two 0.8 meter lengths of 12 mm reinforcing steel bar welded to the 185 mm (8 inch) casing, 0.7 meter below ground level.

d). **TEMPORARY CAP**

The top of the borehole shall be sealed with a cap that shall comprise a round plate of mild steel, of thickness not less than 3.0mm. This will be continuously welded in single pass to the mild steel borehole casing or should be lockable.

1.13 RECORDS

After completion of all works at the borehole, the Contractor shall submit to the Project Manager within four (4) days a complete document with the following additions:-

- Drilling penetration Log and Geological Log
- WAB 24 Borehole Completion Record (Three Complete Sets)

1.14 TECHNICAL LITERATURE

- a) A Bidder **must** submit the following information together with the Bid documents to assist in fair evaluation:-
- Technical specifications on drilling rig and other ancillary equipment (make, model, rated capacity etc.)
 - Particulars and specifications of materials used in the construction of the borehole.
- Any other information the Bidder may deem is important in evaluation as well as BOOSTING his/her chances of winning the Bid.

ELECTRO - MECHANICAL WORKS SPECIFICATIONS

1. ELECTRICAL WORKS

1.1. REGULATIONS AND STANDARDS

The complete electrical installation shall be carried out by a competent Contractor and in accordance with the specifications and compliance with the following;

- (a). Kenya Bureau of Standards
- (b). Regulations for the Electrical Equipment of Buildings (Latest Edition) issued by the Institution of Electrical Engineers of Great Britain.
- (c). IEC standards and Electric Power Act and the Rules made there under.
- (e). Kenya Power & Lighting Co. Ltd Regulations and Bye-Laws.
- (f). Government Electric Specifications GES 1 and 2 which can be viewed at the office of the Chief Electrical Engineer, Ministry of Roads, Public Works and Housing.
- (g). Industrial Safety Regulations currently in force.

SWITCH GEAR, STARTER PANELS AND OTHER ENCLOSURES

Unless otherwise specified, all shall be surface mounting, water tight, corrosion resistant, vermin-proof, termite-proof, dust-proof and resistant to attack by oils and grease. They shall be fabricated from heavy gauge 16 swg, folded, spangled, galvanized and rust protected sheet steel of minimum thickness 1.5mm. They shall be finished in a two tone, heat resistant, non-peeling-off stoved gray enamel paint or epoxy powder coating.

1.2. ELECTRIC CABLES

Unless otherwise specified, all cables shall be made of copper material and conform to BSS 6004, 600/1000 volts grade.

- (i). UNARMoured CABLES: They shall be PVC insulated.
- (ii). ARMoured CABLES: **They** shall be PVC SWA PVC copper cables.
- (iii). BOREHOLE CABLES
They shall be made from tough flexible rubber material that will not allow water to seep through when submerged in the borehole water.

1.3 GS CABLE TRUNKING

The trunking shall be manufactured from heavy duty hot dip galvanized mild steel sheet of minimum thickness 1.25 mm with screw-in and twist-to lock top lid.

1.4 PUMP SET STARTER

It shall be 3 phase, 415 vac, 50/60 Hz Direct-On line. It shall be in a water tight, front access, hinged door, lockable enclosure, comprising of the following components among others fully wired and labeled. The starter shall be fully wired and 3 No. sets of schematic and control wiring drawings **MUST** be supplied along with the starter.

- Appropriate rating contactors / appropriate rating thermal overload.
- Push buttons (green marked "START", black marked "STOP/RESET").
- Integral TPN (MCB) type 2.
- 1 No. 50x50mm AC ammeter of appropriate range.
- 1 No. 50x50mm AC voltmeter of range 0-500 vac.c/w protection MCB/fuse.
- Over/Under voltage and phase failure protection relay set at 380 and 440 vac.

- 2 No. Water level control relays.
- Pilot indicator lights (green marked "PUMP RUN", red marked "OVER LOAD TRIPPED", yellow marked 'BOREHOLE LOW', etc.....
- Hours run counter range 0-99999 hours.
- Cable terminal blocks of appropriate rating.

1.5 BOREHOLE MOTOR (AS GRUNDFOS)

The motor shall be the two pole canned asynchronous, 3 phase, 415 vac, squirrel cage, induction type, continuously rated and of minimum CLASS "B" insulation. The entire body including the shaft shall be made of heavy duty stainless steel material. The motor shall be supplied complete with 3 lead copper tail cable.

1.15 BOREHOLE PUMP (AS GRUNDFOS)

The pumps shall be the high pressure, vertical mounting, multi-stage, centrifugal type running at a full load speed of not less than 2800 rpm. The entire pump body including the strainer, cable guard, non- return valve, impellers, shaft, locking nuts and washers shall be made of heavy duty stainless steel material. The bearings shall be the water lubricated type, wear resistant. The impeller(s) shall be hydraulically and dynamically balanced.

1.16 WATER LEVEL CONTROL ELECTRODES

All the electrodes shall be made of stainless steel material **AISI 304 as Omron F03-01, Londex, Ascoor** similar approved quality made of stainless steel. The borehole electrodes shall be of size 6.0 mm diameter and 120mm length (D6x120mm) and in their tough moulded shrouds.

1.9 BOREHOLE COMBINED PIPE AND CASING CLAMP

The clamp shall be the heavy duty type. It shall comprise of 3 pieces; the bottom half clamps to the borehole casing, while the top portion which rests on the top of the casing clamps to the pipe column and holds it centrally in the casing bore.

1.10 BOREHOLE SUNDRIES

Unless otherwise specified, the words "BOREHOLE SUNDRIES" shall mean the following items to be used in the installation, support and inter-connection of the borehole pump and drop pipes to the rising mains. Unless otherwise specified, the GI fittings shall be of the same diameter as the drop pipes.

- Rolls of 6 water proof adhesive rubber tape and cable ties.
- Tee, sockets, nipples, 90° slow bends and plug.
- 2 Liters of Boss black type COLAS RC.

1.11 RC CABLE AND PIPE ROUTE MARKERS

They shall be of size 1100mmLx200mmWx80mmT with the words "POWER CABLE" OR "WATER PIPE" in 40mm height letters mould cast in black indelible color in the concrete. They shall be cast using Y8 RC concrete of mix ratio (mix ratio 1:3:6).

1.20 HATARITILES

The tiles shall be used to cover the underground armoured cables for protection against mechanical damage. They shall be of size 300mmLx150mmWx30mmT with the word "HATARI" in 40mm height letters mould cast in the concrete. They shall be pre-cast using concrete of mix ratio (mix ratio 1:3:6).

1.10 GS BOREHOLE PROTECTION COVER

The cover shall be all weather-proof, rectangular in shape with pitched top (3°). The cover shall be fabricated from hot dip galvanized heavy gauge (16 swg) sheet steel plate of minimum thickness 1.75mm. It shall have GS solid handles and pad locking facilities on the opposite sides. The cover shall be in an L-SHAPED steel frame (25x25x2.5mm thick).

1.15 WIRING METHODS OF ELECTRICAL INSTALLATIONS AT MEDIUM AND LOW VOLTAGE

(i). SYSTEM "A"

Plastic insulated cables enclosed in screwed steel conduit or trunking on the surface of walls and ceilings or in the roof space.

(ii). SYSTEM "B"

Plastic insulated wires armoured cables laid on the surface of walls, cable trays, in cable trenches or ducts.

(iii). SYSTEM "C"

Plastic insulated cables clipped to the roof members and run in metal or plastic conduit drops concealed in walls or ducts formed in the fabric of the building.

1.18 SYSTEM BONDING

All non-conducting metallic parts which form part of the electrical system or are within the vicinity/route of the electrical system shall be effectively bonded to the main earthing system.

1.19 EARTHING SYSTEM

All the electrical installation earthing conductors shall be connected to the earth electrode through an earth lead. The earth lead shall be firmly connected to the electrode by means of the clamp, after which a thin film of grease or Vaseline shall be applied at the clamp area for protection against corrosion.

2 TECHNICAL LITERATURE

- (a). The bidder **MUST** submit adequate technical literature to assist in evaluation. The literature information shall **INCLUDE**;
- Performance curves for the pump set
 - Make, type model and country of origin of the generator, pump, motor, pump starter etc.
- (b). **THE WINNER OF THE BID MUST SUBMIT THE FOLLOWING;**
- 1 No. set of the **User manual** for the pump set.

- Written Warranty document of minimum 12 months for the pump set, starter etc.
- 1 No. SET of original film and 3 No. SETS each of as-fitted electrical schematic drawings, control wiring drawings for main switch gear, pump starter, cabling and water pipe lay out between borehole and tank.

SECTION 7

PREAMBLE TO BILLS OF QUANTITIES

1. The Bills of Quantities are an integral part of the Contract documents and must be read in conjunction with the conditions of contracts, instruction to Bidders, specifications and drawings.
2. The brief descriptions of works under the items in the Bill of Quantities are purely for the purpose of establishing a standard to which a Contractor shall adhere. Otherwise alternative brands of equal and approved quality will be accepted.
- 30.0 The rates and prices inserted by the Bidder in the Bill of Quantities shall be deemed to include all obligations under the Contract including but not limited to supply of materials, labor, delivery to site, storage on site, installation, testing, commissioning, overhead charges, incidentals, contingency expenses and profits and all taxes In accordance with Government policy.
- 31.0 All prices omitted from any item, section, part of the Bills of Quantities shall be deemed to have been include to another item, section or part thereof. Should the Contractor install any material not specified herein before receiving **written approval** from the Project Manager, the Contractor shall remove the material in question and , **at his/her own cost**, install the proper material.
- 32.0 The words "TAKE CUSTODY" shall be taken to mean delivery, unloading, stocking, getting from the store, transporting, unloading, getting into position for fixing all the materials concerned and all other contingency expenses.
- 33.0 The grand total of prices in the price summary page must be carried forward to the Form of Tender **for the tender to be valid.**
7. Where dimensions are entered:-
mm - means millimeters, LM - means, Linear meter L - means Length
W - means Width, D - means Depth, DN - means Diameter Nominal,
PN - means Pressure Nominal LS - means Lump sum.
8. Tenderers **MUST** enclose, together with their submitted tender, manufacturer's brochures detailing technical literature and specifications of the equipment that they intend to offer. Where the brochures contain different models and sizes of the equipment, the bidders **MUST** clearly mark out the model and size of equipment they intend to offer by using a 'mark pen'. **Where brochures are to be used for tender evaluation and the tenderers have not enclosed them in their tenders, then the same shall be sought from the tenderers to assist in the evaluation process.**
9. STATEMENT OF COMPLIANCE
 - a) I confirm compliance of all clauses of the General Conditions,
 - b) Particular Conditions, General Specifications and Particular Specifications in this Tender.
 - c) I confirm that, I have not made and will not make any payments to any person, who can be perceived as an inducement to win this tender.

Signed: Date.....

.....

FOR: and on behalf of the Tenderer

(OFFICIAL RUBBER STAMP)

BILL OF QUANTITIES FOR DRILLING, EQUIPING AND CONSTRUCTION OF ELEVATED STEEL WATER TANK

A. SCHEDULE OF WORKS FOR MWAKISHINI (RUKINGA) SITE

1. Preliminary and general items
2. Borehole drilling, development and test pumping
3. Purchase of the pump, solar panels and support structure.
4. Construction of the permanent pump house.
5. Construction of fabricated elevated steel tank on 6metres height steel tower and piping
6. Laying of a pipeline 1.6 inch diameter from the borehole to the water storage tank and community water kiosk.
7. Construction of perimeter fence of chain link and concrete poles to enclose the pump house and solar panels, the perimeter fence to be of dimensions 10*10 with metal frames gate and weld mesh and construction of a concrete slab "manhole" to secure the borehole.
8. Construction of community water kiosk.

1. Preliminary and general items

| ITEM | DESCRIPTION | UNIT | QTY | RATE | AMOUNT (Ksh.) |
|------|--|------|-----|---------|---------------|
| 1.1 | Allow provision for insurance in accordance with contract conditions | Item | L.S | 200,000 | |
| 1.2 | Water Resources Authority fee and drilling completion report | Item | L.S | 5,000 | |
| 1.3 | Provision for Environmental Impact Assessment reports | Item | L.S | 50,000 | |
| 1.4 | Processing of water abstraction permit | Item | L.S | 10,000 | |
| 1.5 | County government fee (where applicable) | Item | L.S | 5,000 | |
| 1.6 | Provide, erect and maintain sign boards at locations by the project manager at site of works | Item | L.S | | |
| 1.7 | Establish, maintain and remove contractors camps, offices, facilities at the end of contract | ITEM | LS | | |
| 1.8 | Allow amount for stationery, communication for project manager | P.S | SUM | 50,000 | |

| | | | | | |
|------|---|-----|-----|---------|--|
| 1.9 | Allow amount to cover supervision by State department of Irrigation | P.S | SUM | 600,000 | |
| 1.10 | Allow for profits for item 1.10 & 1.11 | % | 15 | | |
| 1.11 | TOTAL CARRIED TO SUMMARY PAGE | | | | |

2. Borehole drilling, development and test pumping

| ITEM | DESCRIPTION | UNIT | QTY | RATE | AMOUNT (Ksh.) |
|------|--|------|------|------|---------------|
| 2.1 | Mobilization of drilling unit, test pumping equipment, erect at position of bore hole, dismantle and demobilise on completion, Allow for all costs involved in providing water for all requirements and site clearance | Item | LS | | |
| 2.2 | Drilling of a 355mm bore from 0 - 200 m | m | 200 | | |
| 2.3 | Supply and installation of plain steel 152mm class B steel casing- 4.5mm thickness | Pcs | 35 | | |
| 2.4 | Supply and installation of slotted steel casings 152mm class B diameter -4.5mm thickness | Pcs | 13 | | |
| 2.5 | Installation of gravel pack (2-4mm)(not laterite) to at least 3m above top screen | Ton | 5 | | |
| 2.6 | Grout between the casing and the borehole for top ten metres | Ls | 1 | | |
| 2.7 | Borehole development by airlifting and /or surging for minimum of 4 hrs, with estimate of discharge and static water level measurement | Hr | 4 | | |
| 2.8 | Test pumping for 24 hours , draw down, yield recovery and data analysis | Hr | 24 | | |
| 2.9 | Supply and installation of surface casing | m | 6 | | |
| 2.10 | Collect water samples and carry out full water quality analysis in reputable laboratory accepted by ministry | Ls | item | | |
| 2.11 | Fabrication and erection of borehole gantry | Ls | item | | |

| | | | | | |
|--|--------------------------------------|--|--|--|--|
| | TOTAL CARRIED TO SUMMARY PAGE | | | | |
|--|--------------------------------------|--|--|--|--|

3. Pump, solar panels and support structures,

| Item | Description | Unit | Qty | Rate | Amount Ksh. |
|------|--|------|------|------|-------------|
| 3.1 | Submersible water pump | Pcs | 1 | | |
| 3.2 | starter motor | Pcs | 1 | | |
| 3.3 | cable interconnection and Inverter | Pcs | 1 | | |
| 3.4 | 6mm ² x four core submersible cable | Mtrs | 175 | | |
| 3.5 | 250 Watts Solar Panels | Pcs | 80 | | |
| 3.6 | 2.5" Borehole Upvc Pipes – Heavy duty | pcs | 57 | | |
| 3.7 | 2.5" Adaptor sets- Bottom and top | Set | 1 | | |
| 3.8 | Solar Support Structure 6 Metres high Galvanized | Lot | 1 | | |
| 3.9 | Solar DC main Circuit breaker | Pcs | 2 | | |
| 3.10 | Solar DC enclosure | Pcs | 2 | | |
| 3.11 | Solar MC 4 connectors | Pcs | 4 | | |
| 3.12 | Electrode cable for probes – Black | Mtrs | 175 | | |
| 3.13 | Electrode cable for probes – Brown | Mtrs | 175 | | |
| 3.14 | Electrode probes | Set | Pair | | |
| 3.15 | 6mm ² x3 armored U. G. cable between solar unit and junction box | Mtrs | 20 | | |
| 3.16 | 1.5 mm x two core cable for float switch | Mtrs | 20 | | |
| 3.17 | 2.5" master Water meter | Pcs | 1 | | |
| 3.18 | 2.5" Borehole cover sundries, composed of gate valve, NRV, unions, nipples, borehole cover plate and accessories | Lot | 1 | | |
| 3.19 | Earth rod complete with earth clamp and earth cable | Lot | 1 | | |

| | | | | | |
|------|---|-----|----|--|--|
| 3.20 | 3/4" Pvc Airline pipe | Pcs | 28 | | |
| 3.21 | Cooling Sleeve | Pcs | 1 | | |
| 3.22 | Automatic voltage switcher(AVS 30) | PCS | 1 | | |
| 3.23 | Float switch | Pcs | 1 | | |
| 3.24 | Mounting of solar support system, mounting of panels, electrical connections, testing and commissioning | Lot | 1 | | |
| 3.25 | Transport of materials to site | Lot | 1 | | |
| 3.26 | Lowering of the pump into the borehole, electrical connections testing and commissioning | Lot | 1 | | |
| | TOTAL CARRIED TO SUMMARY PAGE | | | | |

4. Construction of fabricated elevated steel tank of 24m³ on 6metres height steel tower and piping.

| ITEM | DESCRIPTION | Unit | Qty | Rate | Amount (Ksh.) |
|------|--|------|-----|------|---------------|
| 4.1 | Excavate a hole size 1.5*1.5*1.8 meters depth in normal soil, ram the floor and straighten sides | No. | 4 | | |
| 4.2 | Fabricate, supply and position steel foundation bolts templates of size ID26*600mmL and install high tensile strength half rough thread foundation bolt of D25*650mmL each c/w nut and 3No. 3.0mm thick GS flat washers. The bolts shall be grouted in position using mortar mix ratio 1:1 | No. | 16 | | |
| 4.3 | Supply, deliver to site and place | | | | |

| | | | | | |
|-----|--|----------|----------|--|--|
| | concrete of mix ratio 1:1:5:3 in the foundation hole up to 150mm above the ground. The cost shall be inclusive of shuttering material. | m3 | 16.5 | | |
| 4.4 | Fabricate, supply to site and erect the tank support steel tower of height 6metres above the ground with square 3.78m2 plat form, 0.6metres width chequered steel perimeter walkway , two caged steel access ladders , guard rail and associated accessories. The tower shall be able to support 40 ton weight | Unit | 1 | | |
| 4.5 | Supply, deliver to site mount on the tower plat form centre a 24m3 capacity high quality, strong , external flanged fabricated steel panel tank as per the given specifications c/w GI pipe connection fittings (1No. DN 50 for inlet, scour, overflow and 1No. DN50 for outlet) | No. | 1 | | |
| 4.6 | Supply , install water level indicator assembly | No. | 1 | | |
| 4.7 | Excavate and backfill trench of depth 450mm to accommodate HDPE pipe | RM | 253 | | |
| 4.8 | Supply, deliver to site, install DN50 HDPE pipe to connect to existing reticulation / water kiosk c/w all accessories | RM | 253 | | |
| 4.9 | Supply, deliver to site , install , connect at the chamber to the borehole test; a) DN50 Class B inlet , overflow and scour pipes b) D50 class B outlet pipe NOTE | LM LM | 30 30 | | |

| | | | | | |
|------|---|----------|--------|--|--|
| | The pipes shall be firmly fixed on the tower columns using GS steel brackets of size 25mmW*4.0mm thickness | | | | |
| 4.10 | Supply, deliver to site aluminum paint. Apply two (2) coats on all metal surfaces of the steel tower and elevated tank and pipe work. | LS | item | | |
| 4.11 | Supply, deliver to site and install water level indicator as per the specification. It shall be graduated in cubic meters and liters | No | 1 | | |
| 4.12 | Supply, deliver to site and install PN6 GI threaded pipe fittings | No | 1 | | |
| 4.13 | Supply, deliver to site and install and test threaded gate valve type phegler; a)DN50 b)DN50 | No No | 1 1 | | |
| | TOTAL CARRIED TO SUMMARY PAGE | | | | |

5. Construction of Pump house.

| ITEM | DESCRIPTION | Unit | Qty | Rate | Amount |
|------|---|------|------|------|--------|
| 5.1 | Supply to site all materials and construct a pump housing of size 3m*3m | LS | item | | |
| 5.2 | Excavate foundation trench of size 1.5ML*1.5MW*1.0M dept. (1.5 meter square hole) in normal soil and compact the floor. | LS | item | | |
| 5.3 | Supply, deliver to site and place concrete (1:3:6) of thickness 250mm in the trench | LS | item | | |

| | | | | | |
|-----|--|----------------|------|--|--|
| 5.4 | Supply, deliver to site dressed building stones of size 375*225*150mm and erect a course of a wall around the borehole to 750mm below the ground level such that the internal dimensions of the chamber is 1200mm square and be level with the parking area road level | LS | item | | |
| 5.5 | Hard compact the fine soil inside the hole to a depth of 900mm below the ground level, fill in the whole 150-250mm stone boulders and compact hard. And place 50mm thick compacted concrete blinder (1:6:9) and place 200mm thick 1:3:6 floor slab concrete to 10mm below the ground level | LS | Item | | |
| 5.6 | Supply, deliver materials to site, plaster the inside of the chamber and finish the top with nilo | M ³ | 1.25 | | |
| 5.7 | Supply, deliver to site and install lockable 2 flap lockable, water tight chequered steel top lid of dimensions 1200*1200*2.0mm thickness to fit borehole protection chamber. It shall be in a GS frame c/w heavy duty stainless steel padlock | LS | Item | | |
| 5.8 | Supply, deliver to site and install RC cable route marker as per the specification 1.11 and of size 1100*200*80mm thick. Use 0.13m ³ concrete (1:3:6) to install each marker. The cost should be inclusive of concrete and excavation of a square hole of size 450*450*600mm depth hole | No. | 2 | | |
| | RENDERING Plastering the inside of the wall with 1:4 cement motor | | | | |

| | | | | | |
|--|---|--|--|--|--|
| | DOOR Supply and fix steel door leaf complete with shutters, hinges, outside locks and painted with desired colors | | | | |
| | TOTAL CARRIED TO SUMMARY PAGE | | | | |

6. Laying of a pipeline 1.6 inch diameter from the borehole to the water storage tank and community water kiosk.

| ITEM | DESCRIPTION | Unit | Qty | Rate | Amount |
|------|---|------|------|------|--------|
| | Supply lay pipes and fittings | | | | |
| 6.1 | Excavate trench 500mm wide, 600mm deep in moderate hard ground from borehole to the wildlife trough and from borehole to KWS office and community water kiosk | RM | 352 | | |
| 6.2 | Supply 1.6" HDPE pipe | RM | 352 | | |
| 6.3 | Supply ¾" OD uPVC pipe class PE 100 | RM | 352 | | |
| 6.4 | Prepare pipeline bedding, lay pipes and backfill the trench to the ground level to specified standard to the storage tank, community water kiosk, KWS office and wildlife water trough. | RM | 352 | | |
| 6.5 | Supply fittings including adapters, elbows, pressure control valves, air valves tees, plugs, unions, none return valves, gate valves, washouts etc. (15% of item 4.2 and 4.3) | LS | ITEM | | |
| 6.6 | Construct valve chambers 600x450mm from pipeline to 150mm above ground level complete with cover | No. | 2 | | |
| 6.7 | Testing and commissioning Testing and commissioning of the pipelines | LS | ITEM | | |
| | TOTAL CARRIED TO SUMMARY PAGE | | | | |

7. Construction of perimeter fence to enclose the borehole and the pump house from encroachment

| Item | Description | Unit | Qty | Rate | Amount (Ksh.) |
|-------------|---|-------------|------------|-------------|----------------------|
| 7.1 | Supply and install concrete post at least 900mm square, 10ft long for fencing at least 100m ² area | No. | 120 | | |
| 7.2 | Supply and install concrete corner support posts at least 900mm thick square | No. | 30 | | |
| 7.3 | Supply and install chain link wire SWG18, 18m long each by 8ft high | No. | 4 | | |
| 7.4 | Supply plain wire SWG18 600m roll for use in installation of chain link fence including all hooks and sundry | No. | 2 | | |
| 7.5 | Supply and install double shatter steel frame gate with mesh wire 4mx 2m complete and painted | No. | 1 | | |
| | TOTAL CARRIED TO SUMMARY PAGE | | | | |

8. Construction of wildlife water trough and community water kiosk.

| ITEM | DESCRIPTION | Unit | Qty | Rate | Amount (Ksh.) |
|-------------|--|----------------|------------|-------------|----------------------|
| 8.1 | Excavation of the top soil to firm foundation soil for the above troughs and community water point | m ³ | 2 | | |
| 8.2 | 400mm hardcore filling laid and compacted in 200mm thick layers | m ³ | 2 | | |
| 8.3 | Mass concrete for flooring including raised plinth (5m x 0.5m) x 2 and (0.8m x 0.5m) x 2 | m ³ | 1.16 | | |
| 8.4 | 200mm thick block wall of coursed block units jointed with 1:4 cement and sand mortar. | m ³ | 1 | | |
| 8.5 | Plastering the inside and outside | m ³ | 1.5 | | |

| | | | | | |
|-----|--|-----|-----|--|--|
| | of the wall with 1:4 cement motor | | | | |
| 8.6 | Supply and fix 4" GI pipe connection for the inlet, out, washout and over flow | Pcs | 1.0 | | |
| 8.7 | Provide 100mm stone rabble parapet around the trough. | m 3 | 10 | | |
| 8.8 | Construction of community water kiosk | LS | | | |
| | TOTAL CARRIED TO SUMMARY PAGE | | | | |

Summary page

| | Item /Description | Total Cost |
|---|--|-------------------|
| 1 | Preliminary and general items | |
| 2 | Borehole drilling, development and test pumping | |
| 3 | Purchase of the pump, solar panels and support structure | |
| 4 | Construction of fabricated elevated steel tank on 14metres height steel tower and piping | |
| 5 | Construction of the permanent pump house | |
| 6 | Laying of a pipeline 1.6 inch diameter from the borehole to the water storage tank and community water kiosk | |
| 7 | Construction of perimeter fence of chain link and concrete poles and community water kiosk | |
| 8 | Construction of wildlife water trough and community water kiosk | |
| | Sub Total | |
| | Allow 16% VAT | |
| | Allow 3% withholding tax | |
| | Allow 7.5% contingencies | |
| | GRAND TOTAL | |

AMOUNT KSHS (WORDS)

.....

(AMOUNT IN FIGURES = KSHS.....)

.....
 SIGNATURE

.....
 COMPANY OFFICIAL STAMP

SECTION 8

BID QUESTIONNAIRE

NOTE: Please fill in block letters.

Full names of Bidder:

Full address of Bidder to which tender correspondence is to be sent (unless an agent has been appointed below):
.....
.....

Telephone number of Bidder:

Telex address of Bidder:

Name of Bidder's representative to be on matters of the tender during the bid period:

.....

Details of Bidder's nominated agent (if any) to receive bid notices. This is essential if the bidder does not have his registered address in Kenya (name, address, telephone, telex):

.....
.....

Signature of Bidder

CONFIDENTIAL BUSINESS QUESTIONNAIRE

You are requested to give the particulars indicated in Part 1 and either Part 2 (a), 2 (b) or 2 (c) and 2(d) whichever applies to your type of business. You are advised that it is a serious offence to give false information on this Form.

Part 1 - General

Business name

Location of business premises; Country/Town

Plot No. Street/Road

Postal Address Tel No.....

Nature of Business.....

Current Trade License No..... Expiring date

Maximum value of business which you can handle at any time: K. pound
.....

Name of your bankers

Branch

Part 2 (a) - Sole Proprietor

Your name in full Age

Nationality Country of Origin

Citizenship details.....

Part 2 (b) - Partnership

Give details of partners as follows:

| Names in full | Nationality | Citizenship details | Shares |
|---------------|-------------|---------------------|--------|
| 1. | | | |
| 2. | | | |
| 3. | | | |

Part 2 (c) - Registered Company:

Private or Public

State the nominal and issued capital of the company

Nominal Kshs.....

Issued Kshs.....

Give details of all directors as follows:

| Names in full | Nationality | Citizenship details | Shares |
|---------------|-------------|---------------------|--------|
| 1. | | | |
| 2. | | | |
| 3. | | | |

Part 2 (d) - interest in the firm:

Is there any person/persons in (Name of Bidder) who has interest in this firm? Yes/No (Delete as necessary)

I certify that the above information is correct.

..... (Title) (Signature) (Date)

Attach proof of citizenship

ANTI - CORRUPTION POLICY IN THE PROCUREMENT PROCESS

UNDERTAKING BY BIDDER ON ANTI - CORRUPTION POLICY / CODE OF CONDUCT AND COMPLIANCE PROGRAMME

The governments of Kenya is committed to fighting corruption in all its forms and in all its institutions to ensure that all the government earned revenues are utilized prudently and for the purpose intended with a view to promoting economic development as the country work towards actualizing Vision 2030.

Here State Department for Wildlife, we are highly committed to fighting any form of corruption in our organization to ensure that all the monies that the government entrust with us, is optimally and prudently utilized for the benefits of all the people we serve.

The following is a requirement that every Bidder wishing to do business with the State Department for Wildlife, must comply with:

- (1) Each bidder must submit a statement, as part of the tender documents, in the format given and which must be signed personally by the Chief Executive Officer or other appropriate senior corporate officer of the bidding company.
- (2) Tenders which do not conform to these requirements shall not be considered.
- (3) If the successful bidder fails to comply with its No-bribery commitment, significant sanctions will apply. The sanctions may include all or any of the following:
 - a) Cancellation of the contract;
 - b) Liability for damages to the public authority and/or the unsuccessful competitors in the bidding possibly in the form of a lump sum representing a pre-set percentage of the contract value (liquidated).
- (4) Bidders shall make available, as part of their tender, copies of their anti-Bribery Policy/Code of Conduct, if any, and of their-general or project - specific - Compliance Program.
- (5) The Government of Kenya through Kenya Anti-Corruption Commission has made special arrangements for adequate oversight of the procurement process and the execution of the contract. Those charged with the oversight responsibility will have full access if need be to all documentation submitted by Bidders for this contract, and to which in turn all Bidders and other parties involved or affected by the project shall have full access (provided, however, that no proprietary information concerning a bidder may be disclosed to another bidder or to the public).

1. MEMORANDUM (FORMAT)

Clause 41, 62 and 66 of Kenya Public Procurement and Asset Disposal Act (PPADA) 2015

This company _____ (*name of company*) has issued, for the purposes of this tender, a Compliance Program copy attached -which includes all reasonable steps necessary to assure that the No-bribery commitment given in this statement will be complied with by its managers and employees, as well as by all third parties working with this company on the public sector projects or contract including agents, consultants, consortium partners, subcontractors and suppliers)"

We also confirm that we have not been debarred from participating in Public Procurement Proceedings.

Authorized Signature: _____

Name and Title of Signatory: _____

Name of Bidder: _____

SITE VISIT

DECLARATION FORM

**PROPOSED DRILLING AND EQUIPPING OF ONE (1) BOREHOLE AND
CONSTRUCTION OF ELEVATED STEEL PRESSED WATER TANK AT MWAKISHINI**

I/We.....of..... do hereby declare that I/We have visited the site in the company of the below mentioned consultant and fully understand the scope and sequence of works.

COMPANY REPRESENTATIVE

NAME:

DESIGNATION:

Date

OFFICIAL STAMP

STATE DEPARTMENT FOR WILDLIFE REPRESENTATIVE

NAME:

SIGNATURE:

DATE:

OFFICIAL STAMP

Signed

Date

SITE OFFICE KEY PERSONNEL

(Give names and experience of key supervisory staff the bidder proposes to employ on the works and indicate whether the employee services will be available to the works on a full or part time basis).

| | NAME | NATIONALITY | DESIGNATION | EXPERIENCE |
|----|------|-------------|-------------|------------|
| 1. | | | | |
| 2. | | | | |
| 3. | | | | |
| 4. | | | | |
| 5. | | | | |
| 6. | | | | |

MAJOR ITEMS OF PLANT TO BE USED IN THE CONTRACT

| | ITEM | REGISTRATION | PRESENT LOCATION AND AVAILABLE FOR THE WORKS |
|----|------|--------------|--|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |

I hereby certify that the information above is correct to the best of our knowledge and that we Understand it is our responsibility to provide whatever staff is required to complete the works accordance with the contract.

Bidder Signed Date

**Name Title
(Bidder or his representative)**

SCHEDULE OF INSURANCE FOR THE CONTRACT

| S/No | TYPE OF INSURANCE | NAME OF COMPANY | REGISTERED ADDRESS |
|------|-------------------|-----------------|--------------------|
| 1. | | | |
| 2. | | | |

We hereby certify that we have been advised by the above companies that they are Willing to provide us with the required Insurance(s). We further certify that we will Obtain from the company acceptable to the employer any and all insurance required By the contract.

Bidder:**Signed:**, **Date**

Name:, **Title**
(Bidder or his representative)

SCHEDULE OF ON-GOING PROJECTS

| | DESCRIPTION OF WORK AND CLIENT | CONTRACT PERIOD | DATE COMMENCED | TOTAL VALUE OF WORKS (KSHS) | DATE OF COMPLETION | % COMPLETE |
|----|--------------------------------|-----------------|----------------|-----------------------------|--------------------|------------|
| 1. | | | | | | |
| 2. | | | | | | |
| 3. | | | | | | |
| 4. | | | | | | |

I certify that the above works are currently being carried out by ourselves and that the above information is correct.

.....
(Title)

..... (Signature)

..... (Date)

OTHER SUPPLEMENTARY INFORMATION

1. Financial report for the last three years, balance sheets, profit and loss statements, auditors' reports etc. List them below and attach copies

.....
.....
.....
.....

2. Evidence of access to financial resources to meet the qualification requirements. Cash in hand, lines of credit etc. List below and attach copies of supporting documents.....

.....
.....
.....

3. Name, address, telephone, telex, fax numbers of the Bidder's Bankers who may provide reference if contacted by the Employer.....

.....
.....
.....

4. Information on current litigation in which the Bidder is involved.

(There should be disclosure even if there is no litigation)OTHER PARTY/(IES)

.....
.....
.....

NATURE OF DISPUTE

.....
.....
.....
.....
.....
.....

AMOUNT INVOLVED (KSHS).....

I certify that the above information is correct.

.....
Title

.....
Signature

.....
Date

SECTION 9

APPENDIX "X"

BID EVALUATION CRITERIA

After tender opening, the tenders will be evaluated in 3 stages, namely;

1. Preliminary Examination (Mandatory requirements)
2. Detailed Technical Examination -
3. Financial Evaluation

A). PRELIMINARY EXAMINATION

Bidders must provide the following documents

1. Copy of Certificate of incorporation (**Mandatory**)
2. Copy of current Tax Compliance Certificate (**Mandatory**)
3. Original Bid Bond valid for **150** days from date of tender opening. Value of bid bond should be **Ksh 100,000.00 (Mandatory)**
4. Bid documents **MUST** be Serialized / Paginated (**Mandatory**)
5. form of tender must be duly **completed and signed** by the tenderer (**Mandatory**)
6. Anti-corruption declaration of undertaking **must be signed (Mandatory)**
7. Category of Registration with Ministry of Water and Irrigation in the relevant trade. (**Mandatory**)
8. Registration with the National Construction Authority (**Mandatory**)
9. Provide evidence of ownership (log book) or hire of Drilling rig mounted on a mobile truck (**Mandatory**)
10. Duly completed business Questionnaire

Bidders who do not satisfy any of the mandatory requirements will be disqualified from further evaluation.

B). TECHNICAL EVALUATION

| Item | Description | Max Points |
|--|--|------------|
| I | <u>APPENDIX TO CONDITIONS OF CONTRACT PART II</u> | |
| | Completion period indicated ----- 2 | 2 |
| | Completion period not indicated ----- 0 | |
| II | <u>KEY PERSONNEL (ATTACH EVIDENCE)</u> | |
| | Minimum 5 years' experience (copies of CV & certificates) attached | 6 |
| | (a) Degree Holder - Geology, Engineering (Civil, Mechanical / Electrical).....6 | |
| | (b) Diploma Holder- Ground water inspector, Engineering (Water, Civil / Mechanical / Electrical).... 3 | |
| (c) Certificate Holder (Welder / Plumber / Plant | | |

TABLE 3 – TECHNICAL EVALUATION DETAILS [EQUIPPING]

| ITEM | ITEM DESCRIPTION | MAX. POINTS |
|--|---|-------------|
| I | <p><u>ADEQUACY OF TECHNICAL INFORMATION</u></p> <p>a). Submitted technical literature/ brochures including Performance curves-----7</p> <p>b). Submitted literature and brochures but no Performance curves----- 4</p> <p>c). Not submitted ant technical literature ----- 0</p> | 7 |
| II | <p><u>FULLFILMENT OF PARTICULAR TECHNICAL REQUIREMENTS</u></p> <p>A. PUMP</p> <p>a). i) Pump body casing (stainless steel)----- 5</p> <p> ii). Other materials----- 0</p> <p>b). i). Load speed (2800 - 3000 RPM)-----3</p> <p> ii). Load speed outside the above range----- 0</p> <p>c). i). Make, Model, or Type indicated-----2</p> <p> ii). Make, model, or Type not indicated-----0</p> <p>d). i). Manufacturer and Country of origin indicated-----2</p> <p> ii). Manufacturer and Country of origin not indicated-----0</p> <p>e). i) pump efficiency at duty point 55% minimum 3</p> <p> ii) pump efficiency at duty point less than 55% 0</p> <p>B. MOTOR</p> <p>a). i). Motor body (stainless steel)----- 5</p> <p> ii). Body made of other materials:-----0</p> <p>b). i). Make, model, or Type indicated-----3</p> <p> ii). Make, model, or Type not indicated-----0</p> <p>c). i). Manufacturer and Country of origin indicated----- 2</p> <p> ii). Manufacturer and Country of origin not indicated-----0</p> <p>d). i). motor satisfies pump rating requirement2</p> <p> ii). Motor does not satisfy pump rating requirements0</p> <p>e).i). Motor winding insulation class 'B'3</p> <p> ii). Motor winding insulation not class 'B'0</p> | 15 |
| III | <p><u>D. PUMP STARTER</u></p> <p>a). i). Rating (Kw) indicated and meets pump specifications:----- 1</p> <p> ii). Not Indicated/indicated but do not meet pump specs----- 0</p> <p>b). i). Make, model, or Type indicated-----1</p> <p> ii). Make, model, or Type not indicated----- 0</p> <p>c). i). Mode of starting indicated (DOL, Star-Delta, etc.)-----1</p> <p> ii). Mode of starting not indicated-----0</p> | 3 |
| SUB TOTAL "B" MARKS [EQUIPPING] | | 40 |
| TOTAL MARKS FOR SUB TOTAL "A" AND "B" | | |

Pass mark is 75%

Lowest evaluated bidder to be awarded the tender.