

This agreement is made and entered into effect this 18th September 2017 between:

ATUNYA GHANA Ltd. (Here after called the 'contractor ')

NAME	ATUNYA GHANA Ltd.
ADDRESS	P. O. Box 19696, Accra North
COUNTRY	GHANA
PHONE	(+233) 24 464 8680 (+233) 26 464 8680
REG.NUMBER	CA-71,739

AND

TEAM4Ghana (T4G)

NAME	TEAM4Ghana
ADDRESS	Avda. La Paz n.28 esc.2 6B 09004 Burgos
COUNTRY	SPAIN
PHONE	(+34) 690318642
REG.NUMBER	NIF G09585415



1. Scope of works

The work consists of drilling boreholes and installation with hand pumps for community water supply. The work includes drilling boreholes, installation of casings and screens; provision of gravel packing; development of the boreholes; test pumping; obtaining rock and water samples; water quality analysis; platform casting and hand pump installation; as specified hereinafter and as directed by the Supervisor

Step 1

Site Consultation/Basic feasibility study

After the contract is signed, the contractor will arrange a site consultation. This will involve a representative of the drilling team and a member of our team visiting site to establish the most suitable drilling site, and either a water diviner attending or a hydrological survey being undertaken by the contractor. From our site visit an initial idea of whether the water bearing aquifer will yield the quantity of water required will be established. This is to ensure that we get the correct system for your needs.

Step 2

The drilling and lining of the borehole

The rig will come to site and the borehole drilled, the depth may vary depending on the actual level at which the water is found. The drillers will also line the borehole with a slotted liner at lower levels to allow water to percolate and a solid liner near the surface to prevent migration of surface water into the well.

Step 3

Pump Installation and Testing

Once the borehole has been drilled, the pump is installed, borehole may require a pump test. The borehole is pumped over a period of time to assess both the volume of water it will produce and the speed at which the surrounding rocks will release the water. The scope and length of the test pump will be dependent on a number of factors, such as anticipated flow rate, and volume.

2. Contract period

The contractor will start drilling on third week of September (18th September 2017 - 24th September 2017) and finish all his works as agreed in this contract before 12th October 2017.

3. Accidents and injuries

The contractor agrees that TEAM4Ghana (T4G) will not be responsible in case of any accident or injury to persons or employees in connection with the drilling operations.

4. Guarantee

The contractor gives a three month guarantee on all works done and materials used, starting from the day that are part of this contract are finalized.

5. Delay due to fault of the contractor

In the event of unreasonable delay or failure due to the fault of the contractor this contract may be terminated by TEAM4Ghana (T4G) after having given the contractor 7 (seven) days written notice to remedy the delay or failure and the contractor having failed to do so, in that the event TEAM4Ghana (T4G) will only pay for work already completed.

6. Sub-contracting

Without the written consent of TEAM4Ghana the contractor shall not assign this contract or any part thereof nor without the like consent, shall he make any sub - contract with any person or persons for the execution of any portion of the works.

7. PUMPING / WATER TEST

The Contractor shall perform test pumping to establish the performance and yield of the borehole, and shall provide a suitable, self-contained, mobile test pumping unit, approved by the Supervisor, for this purpose. The method for varying the discharge rate of the pump will depend on the type of pump used, but the Contractor shall ensure the provision of a suitable means of achieving the range of constant flow rates specified by the Supervisor. Test pumping will comprise continuously pumping the well at maximum yield as specified in the 'Table of Tentative Specifications' for the borehole or at any other rate previously defined between the contractor and TEAM4GHANA, according to the outcome of the drilling. The

duration of the test will be at least the time indicated in the 'Table of Tentative Specifications'

The Contractor shall also take water samples for testing the physio-chemical and bacteriological quality at the end of the test pumping.

8. Payment

The sum to be paid by TEAM4Ghana (T4G) to the contractor for the work described in this contract will depend on the works actually done and the extra costs included as defined in this contract. The contractor shall be paid by TEAM4Ghana (T4G) as follows:

- a. FIRST 60 % UPFRONT PAYMENT TO COVER MATERIALS, MOBILISATION AND TRANSPORT
- b. SECOND 30% ONCE THE WATER QUALITY TEST ARE SATISFIED
- c. FINAL 10 % PAYMENT AT THE END WITHIN THREE WEEKS AFTER RECEPTION

However, a first budget approach in which the percentages described above are based is described in Annex 1. The constructor will also supply a detailed and signed invoice of every payment received from TEAM4Ghana (T4G).

TEAM4Ghana (T4G) will transfer these amount of money to the following bank account:

Bank Name	STANBIC GHANA
Branch Code	041021
Account Name	ASIIBISA SILAS A
Account Number	9040 0026 5298 0
Branch	BOLGATANGA

9. Supervision

Both the geophysical survey team and the drilling team will be monitored during their work by a TEAM4Ghana (T4G) fieldworker who will act as supervisor of the works. For the drilling team this person is the first contact person of TEAM4Ghana (T4G). The contractor

accepts the role of the TEAM4Ghana (T4G) supervisor for supervision of geophysical survey and drilling works.

10. Geophysical surveys

The contractor will execute geophysical surveys at or near the community. The geophysical surveys will be executed by performing Electrical Resistivity Soundings at each location set out in profiles until a suitable location has been found.

11. Drilling sites and accessibility

After agreement between the involved communities, the drilling contractor and TEAM4Ghana (T4G) about the exact drilling sites, TEAM4Ghana (T4G) will ensure that any required permits are arranged for these sites. The contractor will operate at no charge for using the land required for its equipment and material at the allocated drilling sites. The contractor will be responsible for all the damages occurring outside the allocated sites. The contractor will clear all debris of any kind, and leave the sites, as far as it is possible, in its original condition after the boreholes have been constructed, developed and pump-tested.

12. Abandoned boreholes

If the contractor is not able to finish the drilling to the required depth (which is at utmost the maximum depth as indicated or has to abandon the borehole due to loss of tools or any other accident or contingency, the contractor will remove the casing or drive pipes already placed in the hole and refill it with clay or concrete, at the contractor's expense. All material extracted from such holes will be considered the property of the contractor. In the case of an abandoned borehole, **TEAM4Ghana (T4G) will not pay for any of the work carried out** and will give advanced authorization for the drilling of a new borehole near the abandoned borehole at the contractor own cost.

13. Information concerning borehole

The contractor will supply a detailed borehole log of: drilling rates; the appearance of the water; soil sampling details and the types of rock found; type, quality, and size of well casing; position, type, quality, and size of screen; maximum and recommended yield; and other relevant details. The contractor will also as part of this agreement supply Team4Ghana with pictures and video recordings regarding the construction of the borehole at every step.

14. Gravel pack

If necessary, an artificial, properly graded gravel pack will be placed in the annular space between the borehole wall and the outer face of the casing. The amount used shall be not less than the amount indicated in the 'Table of Tentative Specifications'. Proper techniques will be used for the accurate placing of this pack. The gravel to be used should be clean, well-rounded and the grains should be hard, of alluvial origin and in size between 0,5 to 2,5 cm diameter. The gravel quality and quantity shall be approved by name organization. The cost for the gravel pack is included in the borehole price. Only if more than the quantity indicated in the 'Table of Tentative Specifications' is needed and this is approved by TEAM4Ghana, the extra amount will be compensated against a previously agreed rate as indicated in the Bill of Quantities.

15. Drilling equipment and depth of drilling

The contractor will use drilling equipment capable of drilling to a depth of at least 30% deeper than indicated in the 'Table of Specifications'. The use of rotary or down-the-whole hammer (air percussion) rigs is acceptable. The drilling depths indicated in the 'Table of Specifications' should only be regarded as a guide. If the actual characteristics of the borehole being drilled justify any change in these specifications, the contractor will request the authorization of TEAM4Ghana (T4G) for such changes to be made. Such authorization should be in writing with an authorizing signature of the TEAM4Ghana (T4G) supervisor on site or any of his or her superiors.

16. Completion of a borehole

Drilling of a borehole shall be considered complete and the Contractor be entitled to payment for that borehole according to the agreed prices as indicated in the Bill of Quantities, when the borehole yields the minimum yield defined for that borehole in the 'Table of Tentative Specifications' after the minimum depth for that borehole as defined also in the 'Table of Tentative Specifications' is reached. In this case the contractor will finalize the borehole and hand pump and be entitled to the agreed borehole price.

17. Avoiding contamination of the borehole

The contractor will take maximum care to avoid any physical, chemical or bacteriological contamination of the borehole during and after construction. If water is contaminated due to the contractor's neglect, the contractor will be obliged to carry out all the required operations,

at the contractor's cost, to remove such contaminations from the borehole. The placement of a lid over the mouth of the well at any time the drilling rig is not in operation is one of the measures taken by the contractor to avoid any kind of contamination.

18. Borehole plumpness and alignment

The borehole will be tested for plumpness' and alignment by means of a straight, 12-meter-long, steel pipe that will be passed down the whole depth of the borehole. The pipe will be supplied by the contractor. The pipe should easily pass down the whole depth of the borehole. The deviation from plumpness of the borehole's axis should never be more than two-thirds the inside diameter of the smallest casing. If these minimum requirements are not met, the contractor will, if possible, correct the defects. If not, TEAM4Ghana (T4G) will reject the borehole and no payments will be made for its drilling and completion. This test should normally be executed before pump testing the borehole.

19. Required pumping unit

The contractor will have a pumping unit capable of discharging 50 per cent more water, at the borehole's pumping water level, than the maximum yield for each borehole indicated in the 'Table of Tentative Specifications'.

20. Borehole development

Once the borehole construction is finished the borehole will be developed by hydraulic surging (by means of a packer piston or compressed air). The development of the borehole should continue until the water is clear to the satisfaction of the TEAM4Ghana (T4G) supervisor.

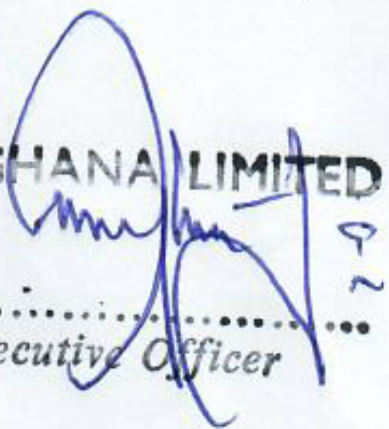
21. Borehole sterilization

Once the borehole has been completed and tested, the contractor will sterilize the borehole with a chlorine solution yielding at least 50 mg/l of active chlorine in all parts of the borehole. The chlorine solution may be prepared from calcium hypochlorite, sodium hypochlorite or gaseous chlorine. The chlorine solution should stay in the borehole for at least four hours at the specified concentration.

22. Signatures for approval of this contract

This contract has been made up in two fold (one for the contractor and one for TEAM4Ghana (T4G)) and is approved by both parties (TEAM4Ghana T4G and the contractor) as shown by the below signatures of representatives of both parties on both copies:

Signed for agreement by (Representative of the) Contractor:



ATUNYA GHANA LIMITED
.....
Chief Executive Officer

Signed for agreement by Representative of TEAM4Ghana (T4G):



TEAM4Ghana
Together Everyone Achieves More
[SIN-G095064151]
www.team4ghana.org / (+34) 690318612
Avda L. Pizarro 28 esc2 4D 30004 Burgos

ROBERTO LÓPEZ ESTEDAN
71293774-F

**ANNEX1. BILLS OF QUANTITIES FOR THE DRILLING, CONSTRUCTION, TESTING AND
HANDPUMP INSTALLATION OF A SUCCESSFUL BOREHOLES**

ITEM	DESCRIPTION	UNIT	QTY	RATE (GH ₵)	AMOUNT (GH)
A.	MOBILIZATION				
1	Mobilization and Demobilization to and from site	LS			1400.00
2	Mounting / Dismounting at each site	LS			400.00
B.	Moving Between Work Sites				
1	Move Site 0-10Km	Km	10	15.00	150.00
2	Move site 10-20Km	Km	20	20.00	400.00
3	Move site beyond 30Km	Km	30	20.00	600.00
C	Borehole Drilling				
1	Drilling through over burden and high weathered rock for completion of 126mm diameter borehole in any type of rock	M	30	50.00	1500.00
2	Drilling through poorly weathered to fresh rock with D.T.H. for completion of 126mm diameter borehole in any type of rock	M	14	80.00	1120.00
D	Borehole Construction				
1	Supply and install 126mm/140mm pvc casing	M	30	6.00	180.00
2	Supply and install 126mm/140mm pvc screens	M	14	6.00	84.00
3	supply and centralizer on 126mm casing and screens	No.	1	8.00	8.00
4	Supply and place gravel as in design type A.	M	5	25.00	125.00
5	Supply cement, mix and place grout above gravel as in a sign type A.	M	5	20.00	100.00
6	Backfill annulus above grout seal as in design type A.		15	5.00	75.00
7	Supply cement, mix and place grout above backfill as in design type A.		18	5.00	90.00
E	Borehole Development				
1	Develop borehole by surging with compressed air and air-	Hrs.	3	18.00	54.00

	lifting				
2	Develop borehole by horizontal jetting and air-lifting pumping	Hrs.	2	35.00	70.00
F	Test Pumping				
1	Supply and install equipment for carrying out test hand pump boreholes	No.	1	55.00	55.00
2	Carry out constant discharge test for boreholes	Hrs.	30	22.00	660.00
3	Carry out recovery test for boreholes	Hrs.	15	14.00	210.00
	TO COLLECTION				7281.00
G.	Water Quality Test				
1	Take, label and store sample of water from borehole	Sample	1	55.00	55.00
2	Carry out chemical analyses as specified	Sample	1	60.00	60.00
3	Carry out bacteriological analyses as specified	Sample	1	65.00	65.00
H	Abandonment of Test Hole				
1	Back unsuccessful boreholes as specified	No.	1	28.00	28.00
I	Borehole Capping/Bail plug				
1	Supply and fix suitable cap on specified	No.	1	18.00	18.00
2	Supply and fix bail plug on bottom as in design type A	No.	1	28.00	28.00
J	Borehole Concrete Pad				
1	Plain in situ concrete (1:3:6-19mm aggregate) in Dwarf walls and drains	M3	1	320.00	320.00
2	Plain in situ vibrated concrete (1:2:4-19) pad and platform	M3	2	340.00	680.00
3	Steel fabric mesh reinforcement ref No. 65 (Weighing 2.34Kg/Sqm) with 300mm minimum side laps both ways (measured net) in: Pad and Platform	M2	6	58.00	348.00
4	Form foundation bolt iron grid with 4 No. 16mm diameter bolts linked with 12mm diameter. Stainless steel bars 4mm center as per drawing	No.	1	80.00	80.00
5	Sawn formwork to: Vertical sides dwarf wall, platform,	M2	26	7.00	182.00

	concrete pad and drain				
6	19mm cement and sand (1:3) rendering as described in concrete or blockwork	M2	23	8.00	184.00
7	50mm level paving (1:3) mortar laid on concrete trowelled hard and smooth	M2	7	12.00	84.00
8	Allow for the construction of soak away	Item			230.00
9	Supply and embed in the fresh concrete a brass number plate	Item			65.00
10	Mobilization/demobilization	Item			120.00
11	Transport	LS			220.00
K	Supply of Hand pumps				
1	Supply Afridey pumps (above 30meters depth)	No.	1	4200.00	4200.00
	TO COLLECTION				6967.00
	Installation of Hand pumps				
1	Installation of Afridev pump	No.	1	150.00	150.00
	Training of Pump Caretakers (Provisional)				
1	Training of submersible pump caretakers	No.	5	100.00	500.00
	TO COLLECTION				650.00
	TOTAL COST OF BOREHOLE				14898.00



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