

KYANDULU BOREHOLE - NGUUMO WARD BoQ					
ALL PRICES ARE INCLUSIVE OF TRANSPORT, LABOUR COSTS, PROFITS, OVERHEADS & 16% VAT					
BILL OF QUANTITIES					
Item	ITEM DESCRIPTION	Unit	Qty	Rate (Ksh)	Amount (Kshs)
Bill 1	GENERAL ITEMS / PRELIMINARIES				
1.1	Allow for mobilization of machinery, equipment and personel for due satisfactory implementation of the works and demobilization from site after completion, provision of security, personal protective equipments and insurance of works	Item	1		
1.2	Supply and erect publicity sign board on 1.5m x 1.2m metal sheet approximately secured on a 40 mm x 3mm thick steel frame at least 2m above the ground level and leveled as directed	No	1		
1.3	Allow a provisional sum of Kshs. 40,000.00 for setting out of the pipeline and water points in the presence of clients Supervising Engineer	L/Sum	1	40,000.00	40,000.00
1.4	E.o bill 1.3 for VAT, profits and overheads	%	31%		
	Sub total carried for collection in the summary page				
Bill	B) SOLAR POWER				
Item	ITEM DESCRIPTION	Unit	Qty	Rate	Amount

2.1	Carefully diagnose existing solar system and remove the faulty solar panels as directed by electrical engineer	Item	1		
2.2	Supply, Deliver & Install a AC/DC inverter for solar powering AC motor Incorporating: - Hybrid capability with the option of DC solar power, generator or mains grid power inputs with the following functions Settable minimum and maximum frequency and open circuit voltage, Display of operating parameters including frequency, voltage, amperage, input power and pump speed, Protection against over and under voltage, over current, system overload and module over temperature, Fault detection with error code display and Selectable hybrid modes that prioritise solar supply as well as maximise output through optimal blending of both power supplies . Install SV3 or equivalent as approved	No.	1		
2.3	Supply and Install Borehole Cable Termination Steel Box housing inverter	No.	1		
2.4	Supply, deliver, instal and test PV solar panels matching wattage and other specs to the existing panels, installed appropriately set up for maximum insolation on steel tower	Watts	4400		

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2.5	Demolish existing solar structure and re fabricate for all solar panels to achieve a solar panel inclination of minimum 20 degrees for maximum insolation. C/W additional SHS and firmly secured panels	Item	1		
2.6	wiring and sundries	Item	1		
2.7	Splicing Kit, Medium Packet	No.	1		
2.8	Earthing c/w lightning arrestor	Item	1		
	Sub Total carried for collection in the summary page				
BILL	C) PIPELINE AND WATER CONNECTION				
	ITEM DESCRIPTION	UNIT	QTY	RATE	AMOUNT
NO.					KSHS.
	Rising Main Pipeline (Kyandulu Borehole to Emale)				
3.1	Bush clearing and excavation to pipe invert level as per engineer's specifications (trench minimum depth 600 mm), lay, test pipeline and backfill to ground level for item 3.2 below	LM	7800		
3.2	Supply, deliver, install and test O/D 63 mm (2") HDPE pipes PN12.5 as per KS ISO 4427:2007. To be laid in the same trench as item 3.1 above	LM	7800		
3.3	Butt fusion for item 3.2 above	Item	1/sum		

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3.4	Supply and install 63 mm (2") single orifice air valve install using a HDPE 63mmx63mm tee (not clamp)	No	5		
3.5	Supply and install 63 mm (2") non return valve	No	1		
3.6	Provision of HDPE 63mm X 63mm tee	No	2		
3.7	Supply and install 63 mm (2") Gate valves (Pegler PN 16 or equivalent as approved by supervising engineer) c/w with fittings	No	4		
Distribution Pipeline (Kyandulu Borehole to Katangi water kiosk)					
3.8	Bush clearing and excavation to pipe invert level as per engineer's specifications (trench minimum depth 600 mm), lay, test pipeline and backfill to ground level for item 3.9 below	LM	1450		
3.9	Supply, deliver, install and test O/D 63 mm (2") HDPE pipes PN12.5 in 100 m rolls as per KS ISO 4427:2007. To be laid in the same trench as item 3.8 above	LM	1450		
3.1	Butt fusion for item 3.9 above	Item	l/sum		
3.11	Provision of HDPE 63mm X 63mm tee	No	1		
3.12	Supply and install 63 mm (2") single orifice air valve install using a HDPE 63mmx63mm tee (not clamp)	No	1		
3.13	Supply and install 63 mm (2") Gate valves (Pegler PN 16 or equivalent as approved by supervising engineer) c/w with fittings	No	2		

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3.14	Rehabilitation of Katangi Water Kiosk				
3.15	Internal and external gloss painting on walls	SM	40		
3.16	Ditto on metal surfaces	SM	7		
3.17	Ditto on wood surfaces	SM	1		
3.18	Padlock	No	1		
3.19	Supply, deliver, install and test 3/4" water meter c/w fittings	No	1		
3.2	Supply, deliver, install and test 3/4" Gate valves or equivalent as approved by supervising engineer) c/w fittings	No	3		
3.21	3/4" G.I pipe 6 m lengths c/w cutting, threading and fittings for 2 No taps	No	2		
	Kibarani tee connection				
3.22	Bush clearing and excavation to pipe invert level as per engineer's specifications (trench minimum depth 600 mm), lay, test pipeline and backfill to ground level for item 3.23 below	LM	200		
3.23	Supply, deliver, install and test O/D 63 mm (2") HDPE pipes PN12.5 as per KS ISO 4427:2007. To be laid in the same trench as item 3.22 above	LM	200		
3.24	Marker Posts				

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3.25	<u>Construct concrete marker posts and install along the water supply pipeline, all in accordance with details shown on drawings. (Reinforced concrete 1:2:4(class 20/20, bars D12), as per details on drawing</u>				
3.26	Pipeline marker post inscribed WL	No	15		
3.27	Air valve marker post Inscribed AV	No	5		
3.28	Sluice Valve marker post inscribed SV	No	4		
	Sub Total carried for collection in the summary page				
BILL	D) 10 CM TANK PLATFORM				
No.	ITEM DESCRIPTION	UNIT	QTY	RATE	AMOUNT
				KShs.	KShs.
	Supply materials and provide personnel to construct a tank base platform 1 m high to hold a 10 m ³ plastic water tank at Katangi water point, Emale and Kibarani (as in the attached drawing)				
4.1	Cut the spoil upto 200mm below G.L over tank base and remove all vegetable soil to temporary spoil heap.	CM	1.5		
4.2	Excavate foundation from stripped level over the tank site to depth n.e. 0.6m deep 300 mm wide and dispose soil as directed	SM	10		

4.3	Mass concrete mix 1:4:8: in 50mm thick blinding to hardcore	CM	0.4		
4.4	225mm thick dressed quarry stone walling	SM	26		
4.5	Provided handle, cut, bend and fix 8 mm deformed steel bars on all alternate course of the wall	Kgs	28		
4.6	Damp proof course	LM	9		
4.7	Provide, pack and compact hardcore in 300 mm layers to fill the tank platform	CM	9		
4.8	Provided handle, cut, bend and fix 8 mm deformed steel bars on top slab	Kgs	16		
4.9	Vibrated reinforced concrete mix 1:2:4 in 100 mm thick for slab	CM	1		
4.1	EXTERNAL PLASTER - 20mm thick 1:2 cement sand to exterior face of tank wall	SM	10		
4.11	Supply, Deliver & Install a 10 m ³ Double Laminated Plastic Water Tank, c/w G.I Overflow Pipes. To be mounted on 1.5 m high masonry tank platform	No.	1		
4.12	Supply and install (2") G.I 6 m lengths for inlet and outlet as approved by supervising engineer) c/w cutting, threading and fittings	No	2		
	sub total for 1 No platform and tank				
	Sub total carried for collection in the summary page	No	3		

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BILL	E) STANDARD WATER KIOSK				
NO	ITEM DESCRIPTION	UNIT	QTY	RATE	AMOUNT KSHS.
	Supply, deliver all necessary materials as below and construct A 2M × 2.5 M kiosks at Emale and Kibarani as advised by the project engineer				
5.1	Setting out of water kiosk in the presence of client's representative	-	-	-	-
	FOUNDATION				
5.1.1	Cut to spoil top soil n.e. 150mm below g.l. over Kiosks and fetching bay areas into a permanent heap	SM	7		
5.1.2	Cut to spoil a strip foundation trench n.e. 600mm below g.l.	CM	1.2		
5.1.3	300mm thick hardcore filling well watered and compacted in layers of 150mm maximum thickness to make up levels	CM	2.1		
5.1.4	50mm thick quarry dust/Murram blinding to surfaces of hardcore	SM	7		
5.1.5	Chemical anti-termite treatment (as gladiator or equally approved) executed complete by an approved specialist under ten (10) year guarantee to surfaces of blinded hardcore	SM	7		

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5.1.6	1000 gauge polythene or any other equally approved Damp proof membrane laid under surface bed with 300mm side and end laps(measured nett - allow for laps)	SM	9		
5.1.7	Natural stone walling, roughly chisel dressed on both sides and jointed in cement and sand (1:3) mortar 200mm foundation walling	LM	9		
5.1.8	Mass concrete class 15 (1:4:8) in 50mm thick surface blinding under strip footings	CM	0.5		
5.1.9	Mesh fabric reinforcement A98 to B.S 4483 (measured nett-allow for laps)	SM	6		
5.1.10	150mm thick 1:2:4 (C20/20) vibrated RC floor slab over Kiosks and fetching bay areas	CM	1		
5.1.11	25mm thick Cement sand screed (1:3) finished with steel float.	LM	5		
	Item total				
BILL 5.2	WALLING				
5.2.1	Hessian based bituminous felt DPC 225mm wide horizontally placed below masonry walling	LM	10		

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5.2.2	Dressed Natural stone / Block walling: 200mm thick, bedded and jointed with cement and sand mortar (1:3), reinforced with 20SWG hoop iron in alternate courses to external wall including gable ends	SM	28		
5.2.3	Vibrated reinforced concrete 1:2:4 (class 20 (20/20mm) in Ringbeams	CM	1		
5.2.4	High yield square twisted steel reinforcement bars to BS 4461 including for cutting, bending to shape, tying, hooking and spacer blocks as described in:				
5.2.5	8mm diameter ditto	KG	10		
5.2.6	12mm diameter ditto	KG	50		
5.2.7	Sawn formwork to Sides of ringbeam	SM	2.7		
5.2.8	Horizontal key pointing in masonry joints in external wall surfaces	SM	27		
5.2.9	15mm thick Cement sand plaster to walls surfaces (1:3) finished to walls to receive paint internally	SM	30		
	Item total				
ITEM 5.3	ROOFING:				
5.3.1	Wrought Cypress Timber 4" x 2"	LM	17		
5.3.2	Wrought Cypress Timber 3" x 2"	LM	20		
5.3.3	Wrought Cypress Timber 2" x 2"	LM	20		

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5.3.4	G30 2m Corrugated Iron Sheets.	SM	8		
5.3.5	Roofing Nails	Kg	1		
5.3.6	Assorted Ordinary Wire Nails	Kg	5		
5.3.7	2.1M x 1M Standard steel door complete with frame, hinges latch bolts and padlock.	SM	1		
5.3.8	1M X 1M Standard steel window complete with frame hinges and latch bolts.	SM	1		
	Item Total				
ITEM 5.4	FINISHES:				
5.4.1	ROOF: 8" x 1" planed timber fascia board	LM	15		
5.4.2	METAL SURFACES: Prepare and apply three coats plastic enamel paint to General metal surfaces (both sides).- (Red oxide primer glossy)	M ²	3.5		
5.4.3	INTERNAL PLASTERED WALLS: Prepare and apply three coats plastic silk emulsion paint to Plastered wall surfaces internally	M ²	30		
5.4.4	EXTERNAL WALLS: Prepare and apply three coats permaplast external wall paint to Rendered sides of beam and walls externally	M ²	7		
5.4.5	Allow for branding as directed inclusive of logos	Item	L/sum		
	Item total				

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ITEM					
5.5	PLUMBING:				
5.5.1	1.5" diameter G.I Pipe class B, c/w cutting and threading	No.	2		
5.5.2	1.5" diameter GI elbow	No	4		
5.5.3	1.5" diameter GI union sockets	No.	4		
5.5.4	1.5" by 3/4" reducing socket G.I	No.	1		
5.5.5	Water meter 1" dia. Kent	No.	1		
5.5.6	3/4" diameter assorted length G.I nipples	No	5		
5.5.7	3/4" diameter GI Pipe class B	No.	1		
5.5.8	3/4" diameter Gate valve-peglar type	No.	3		
5.5.9	3/4" diameter valve sockets	No	2		
5.5.10	3/4" diameter GI union.	No.	4		
5.5.11	3/4" diameter GI Elbow	No	4		
5.6	Pipe joining material:				
5.6.1	Boss white for G.I Pipes	Kg	0.5		
5.6.2	Solvent Cement	Kg	0.5		
5.6.3	Coolant	Lts	1		
5.6.4	Sealing thread	Pcs	2		
	Item total				
	Sub Total for I No water kiosk				
	Sub Total Carried for collection in the Summary page	No	2		
BILL	E) AIR/GATE VALVE CHAMBER				

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No.	ITEM DESCRIPTION	UNIT	QTY	RATE KShs.	AMOUNT KShs.
	Supply materials and provide personnel to construct a air/gate valve chamber (as in the attached drawing)				
6.1	Cut the spoil upto 300mm below g.l. over the borehole chamber area and remove all vegetable soil to temporary spoil heap.	M ³	0.5		
6.2	Excavate foundation from stripped level over the borehole chamber site to depth n.e. 0.6m deep 300 mm wide and dispose soil as directed	M ³	1		
6.3	Mass concrete mix 1:4:8: in 50mm concrete slab	M ³	0.5		
6.4	225mm thick dressed quarry stone walling	M ²	5		
6.5	Provide and instal a lockable double steel Cover c/w padlock or a reinforced concrete cover as instructed	No.	1		
6.6	EXTERNAL PLASTER - 20mm thick 1:2 cement sand to exterior face of the valve chamber wall	M ²	4		
	Sub Total for 1 No valve chamber				
	Sub total carried for collection in the summary page (for 12 No)	No.	12		

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BILL	F) AGRICULTURE COMPONENT - ESTABLISHMENT OF A DEMMO FARM				
No.	ITEM DESCRIPTION	UNIT	QTY	RATE	AMOUNT
				KShs.	KShs.
7.1	Vertical bags- Large Kitchen Garden Sacks	No.	50.00		
7.2	Conical garden dam-liner polythene sheet	No.	50.00		
7.3	Purchase and supply of Kales seeds (Hybrid)	grams	50.00		
7.4	Purchase and supply spinach seeds (Local)	grams	50.00		
7.5	Purchase and supply amarathas (Managu) seeds (Local)	grams	50.00		
7.6	Purchase and supply black night shade (Mchicha) (Local)	grams	25		
7.7	Purchase and supply Coriander (Daniah) seeds (Local)	grams	50		
7.8	Purchase and supply Onion seeds (Hybrid)	grams	250		
7.9	Purchase and supply 50 Kgs fertilizer as advised	No.	2		
7.1	Purchase and supply assorted agrochemicals as advised	MI	600		
7.11	Complete 0.25 ACRE Drip Kit as shall be instructed	No.	1		

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7.12	Improved Deep Super Langstroth Beehive- Brood box(9 7/8 inches (50.5 cm) in length, 16 inches in width, and 9 5/8 inches (24.4 cm) in depth). Super Box - 8.5 inches in height and 19 inches. Painted yellow with Makueni County Name/ FLLoCA , Plastic queen excluder included. Made of pine wood with hive adjustable locks to bind the Superbox and brood box	No.	10		
7.13	<i>Apiary Shed</i>				
7.14	Site clearance, stripping of top soil and ground leveling	m ²	12		
7.15	50*50*3mm angel lines for bench collumns and beams	m	45		
7.16	Fabricate and install 50x50x3mm SHS for shed collumns, appro 3m long, fabicated to receive timber for sloping roof as shall be directed	No.	6		
7.17	75x50mm timber rafter and 50x50mm timber purlin complete with G30 box profile iron sheet roofing	m ²	15		
7.18	Mass concrete 1:3:6 for anchorage	m ³	1		

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7.19	Supply and install 2 m high x 14 gauge chainlink complete with 14 Gauge x 6 strand galvanised wired fencing with 100 x 125 mm cranked precast concrete posts at 2 m centres mortised in mass concrete surround	m	18		
7.2	2m wide steel gate anchored on reinforced concrete columns using 4 No. Y10 Debars each column. c/w padlocks as per the provided drawing	No.	1		
7.21	Purchase and supply of Full Protective Gears Bee Suit, Bee Gloves	No.	2		
7.22	Smoker Gun	No.	2		
7.23	3-Frame Centrifuge Honey Extractor	No.	1		
7.24	Purchase and supply of pasture seeds, Cencrus ciriaris, Eragrostis superba, (Ndata Kivumbu and Mbeetwa) as shall be instructed	Kgs	300		
7.25	Purchase and supply of pasture seeds 0.5 Kg bracharia as shall be instructed	No.	2		
7.26	Supply and install 5,000 litres double layer PVC water tank on a high masonry platform, and plumbing works as shall be instructed	No.	1		
7.27	Supply and install (1.5") GI for inlet and outlet as approved by supervising engineer) c/w fittings	No	2		

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7.28	Construct tank platform 1 m high for item above	No.	1		
	Sub Total carried for collection in the summary page				
BILL	PROVISIONAL SUMS	UNIT	QTY	RATE	AMOUNT
G					KSHS.
8.1	Allow a Provisional sum of Kshs 300,000 for Contingencies to be expended by project manager				300,000.00
	Sub Total carried for collection in the summary page				
BILL	<u>GRAND SUMMARY</u>	UNIT	QTY	RATE	AMOUNT
					KSHS
A	GENERAL ITEMS/PRELIMINARIES				
B	SOLAR POWER				
C	PIPELINES AND WATER CONNECTION				
D	TANK PLATFORM				
E	STANDARD WATER KIOSK				
F	VALVE CHAMBER				

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G	ENVIRONMENT AND AGRICULTURE				
H	PROVISIONAL SUMS				
	TOTAL TAKEN TO TENDER FORM				

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