BILL OF QUANTITIES
KIBOKO TWAANDU WATER PROJECT - INTAKE WORKS, AUXILLIARY WORKS AND KAASUVI EXTENSION

BILL 1.0	PRELIMINARIES AND GENERAL ITEMS				
S/No	Item Description	Unit	QTY	RATE	Amount Ksh
1.0.1	Allow for a project signboard to be installed at a convenient site to be maintained through out the project period, as directed by the Project Manager.	Nos	1		
1.0.2	Allow a provisional sum of One Hundred andTwenty-Five Thousand Shillings for Technical Supervision	LS			225,000.00
1.0.3	Provide % as attendance for item 1.2 above	%	____	225,000	
1.0.4	Butt fusion of HDPE Pipelines as factor of pipe joinery and compression pipe fittings required	LS	1		
	TOTAL FOR PRELIMINARY AND GENERAL ITEMS				

Bill 2.0 KIBOKO INTAKE WORKS

ITEM	ITEM DESCRIPTION	UNIT	QTY	RATE,KSH.	AMOUNT,KSH
2.0.1	Construct 3No. Masonry Spring Boxes, plastered on both faces complete with Manhole Covers	No	3		
2.0.2	Supply, deliver and install HDPE pipes PN10, OD 110, PE 100 as delivery pipes to the masonry sump connecting the 3No Spring Boxes	m	150		
2.0.3	Construct a manmade barrier to surface water and dewater the sump for revamping as shall be instructed by the engineer	Item	1		
2.0.4	Revamp the existing intake by waterproofed plastering of walls and the floor (1:3 Cement:Sand Mortar) c/w overflow provision and Manhole cover	Item	1		
	SUB TOTAL				

BILL 3.0	KWA KIMOTE INTERMEDIATE SOLAR PUMPING WATER SYSTEM				
	SOLAR PUMPING SYSTEM				
ITEM	ITEM DESCRIPTION	UNIT	QTY	RATE	AMOUNT
3.0.1	Supply, Deliver and Install a Submersible Multistage Centrifugal Pump Set of Duty Point: - 5.5 m3/hr at a Total Head of 60meters, DS 5-12 or approved equivalent. The pump Efficiency at duty point should be above 50%. The pump Impellers should be of Stainless Steel. Provide Copies of Pump Characteristic/Performance Curves (Brochures). Install as directed by the Supervising Engineer	Set	1		
3.0.2	Supply, Deliver and Install an AC Solar Pump Control Module, incorporating: - detachable control interface; settable min/max frequency & open circuit voltage; display of operating parameters, including frequency, voltage, amperage, input power & pump speed; display of historical data, including energy generation, maximum power & operating times; protection against over/under voltage, over curerent, system overload & module over temperature; fault detection with error code display.	Unit	1		

3.0.3	Supply a three phase 1.1kw motor compatible to item above, Pedrollo or equivalent approved by the Supervising Engineer	No	1		
3.0.4	Borehole Cable, Double Insulated, 1.5mm2 X 3core	M	70		
3.0.5	Sensor Cable, 2Core, Double Insulated, 0.75mm2	M	70		
3.0.6	Supply, Deliver and Install Fabricated Steel Tower, use square tubes, 4" x 4" x 4mm for Solar Array System, securely anchored in concrete plinth, 0.5m x 0.5m x 1.0m/stand and minimum height - 4 meters high	Lot	1		
3.0.7	Supply, Deliver and Install on the steel tower, Solar Array System of total output 1600Watts, properly arrayed for maximum insolation	W	1600		
3.0.8	Armored Cable, 1.5mm2 X 3 core	M	30		
3.0.9	Armored Copper Cable, 1.5mm2 X 2 core	M	30		
3.0.10	Sensor Cable, 1.5mm2 X 2 core	M	70		
3.0.11	Water level relay	No.	1		
3.0.12	Cable Glands, 25mmL	No.	4		
3.0.13	Cable Glands, 20mmL	No.	2		
3.0.14	Splicing Kit, Medium Packet	No.	1		
3.0.15	Cable Ties, Large Packet, Manila	No.	1		
3.0.16	Insulating Tapes, Large	No.	10		
3.0.17	Allow for boring on tank wall (Upper and lower levels), for installation of Fabricated GI sections and reinstatement of the GI and Electrical Provisions. Reinstatement with water proof vibrated concrete with cementitious primer for additional water proofing	Item	1		
3.0.18	Allow for installation of pump on a 0.3m High Fabricated Stainless Steel Platform	Item	1		
3.0.19	Allow for installation of a water level relay system	Item	1		
3.0.20	Supply, deliver, fabricate and install 50 mm Ø pipe (2") GI Pipe class B including joining to HDPE pipes above in sections directed by the supervising engineer	M	12		
3.0.21	Pumping Site using 2.3 high concrete posts, 2.5m spacing, c/w Mesh Wire (Chain Link) 12.5 G, 8ft High ; include concrete column anchored double opening 2.5m High fabricated steel gate	m	80		
	SUB TOTAL				

BILL 4.0	**Construction of Kwa Kimote (From Distribution Chamber) - Kaasuvi Pipeline**				
S/No	**Item Description**	**Unit**	**QTY**	**RATE**	**Amount Ksh**
A	**Clearing/Excavation**				
4.0.1	Clear pipe route of bushes, shrubs and cart away all arising, Excavate for 450mm wide x 800mm deep channel and stockpile soil material for reuse. Prepare channel bed for pipe laying	M	3600		
4.0.2	Excavate for 450mm wide x 800mm deep channel at road crossings and stockpile soil material for reuse. Prepare channel bed for pipe laying	M	50		
B	Purchase, Supply and Lay joint the following including connecting to the Tank inlet				
4.0.3	75mm dia. GS pipe class B (with sockets on one end). Provide for connection with the HDPE pipe	M	42		
	Purchase, Supply and Lay joint through butt fusion the following including connecting to the Tanks and GI pipes				
4.0.4	75mm dia. HDPE pipe PN 10	M	3100		
4.0.5	Supply, deliver, fit and test 63mm (2") diameter HDPE pipe PN 12.5 manufactured under ISO 4427 standards using virgin PE90 material (Smooth Wall), fully printed with technical details. Cost includes adapters and connectors	m	400		

4.0.6	Triple Action Air relief valve 2" diameter fitted into 3″ pipe with all accessories	No	4		
4.0.7	Construct 1.0m x 1.0m x 0.75m (deep internal dimensions) brick walled chambers c/w RC Cover in specified areas by the supervising engineer as per the provided drawing	No	5		
	Kwa Kimote-Kiboko Return Line				
4.0.8	Rehabilitate existing valve chambers c/w RC Cover in specified areas by the supervising engineer	No	2		
4.0.9	Triple Action Air relief valve 2" diameter fitted into 3″ pipe with all accessories	No	1		
	SUB TOTAL				

BILL 5.0	**Construction of Kwa Kimote (From Distribution Chamber) - Ngulya Junction Pipeline**				
S/No	**Item Description**	**Unit**	**QTY**	**RATE**	**Amount Ksh**
A	**Clearing/Excavation**				
5.0.1	Clear pipe route of bushes, shrubs and cart away all arising, Excavate for 450mm wide x 800mm deep channel and stockpile soil material for reuse. Prepare channel bed for pipe laying	M	1900		
5.0.2	Excavate for 450mm wide x 800mm deep channel at road crossings and stockpile soil material for reuse. Prepare channel bed for pipe laying	M	50		
B	Purchase, Supply and Lay joint the following including connecting to the Tank inlet				
5.0.3	75mm dia. GS pipe class B (with sockets on one end). Provide for connection with the HDPE pipe	M	42		
	Purchase, Supply and Lay joint through butt fusion the following including connecting to the Tanks and GI pipes				
5.0.4	75mm dia. HDPE pipe PN 10	M	1900		
5.0.5	Triple Action Air relief valve 2" diameter fitted into 3″ pipe with all accessories	No	3		
5.0.6	Construct 1.0m x 1.0m x 0.75m (deep internal dimensions) brick walled chambers with RC Cover and locking devices in specified areas by the supervising engineer as per the provided drawing	No	3		
	SUB TOTAL				

Bill 6.0 Rehabilitation of Kimote tank

S/No	**Item Description**	**Unit**	**QTY**	**RATE**	**Amount Ksh**
	Hacking				
6.0.1	Hack the floor and the interior wall surfaces and clean for screeding of floor and plastering of the wall	m^2	148		
	Off-take System Installation				
6.0.2	Off-take System Installation: Boring of Wall	m^2	0.2		
6.0.3	Fix the Off-take System comprised of delivery pipes including installation of footvalve on the rising main and providing for installation of submersible pump as shall be instructed by the engineer	LS	1		
6.0.4	Vibrated Mass Concrete Reinstatement of off-take installation	m^3	1		
6.0.5	Formwork	Item	1		
	Plaster				

6.0.6	35mm Thick cement and sand (1:2) plaster to internal wall surface with water proof cement at a ratio 1kg to 50kg cement. brushed with water proof treatment as vandex, master seal, hyseal, or any other equally approved to manufacturers specification.	m^2	80		
	Screed				
6.0.7	40mm thick cement and sand (1:3) screed to floor, smooth render laid to falls and brushed with water proof treatment as vandex, master seal, hyseal, or any other equally approved to manufacturers specification.	m^2	52		
6.0.8	2:1 sand: cement plaster formed to section shown round bottom of wall to form 35mm deep groove after all excess moisture has drained out and groove has been painted with bituminous paint.	m	50		
	Painting				
6.0.9	Painting to the external surface of walls.	m^2	80		
	SUB TOTAL				

Bill 7.0	**INSTALLATION OF CUSTOMIZED CHEMICAL DOSING UNITS**				
S/No	**Item Description**	**Unit**	**QTY**	**RATE**	**Amount Ksh**
7.0.2	Design, Supply, Deliver and Install Water Treatment Set-Up comprised of Fiberglass reinforced plastics (FRP) 170 litres chemical dosing tank c/w associated pipes and fittings; As shall be instructed by the Engineer	No	2		
7.0.3	Supply and deliver Chlorine 70	Kg	270		
	SUB TOTAL				

BILL 8.0	**NGULYA WATER KIOSK**				
S/No	**Item Description**	**Unit**	**QTY**	**RATE**	**Amount Ksh**
	Construct 1 No Water Kiosk and brand as directed by the Engineer				
8.1	Supply, deliver all necessary materials as below and construct a internal dimensions 2M×2.5M kiosks as per the drawing				
	FOUNDATION				
8.1.1	Cut to spoil top soil n.e. 150mm below g.l. over Kiosks and fetching bay areas into a permanent heap	SM	15		
8.1.2	Cut to spoil a strip foundation trench n.e. 600mm below g.l.	CM	1.5		
8.1.3	300mm thick hardcore filling well watered and compacted in layers of 150mm maximum thickness to make up levels	CM	2		
8.1.4	50mm thick quarry dust/Murram blinding to surfaces of hardcore	SM	15		
8.1.5	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	15		
8.1.6	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	15		
8.1.7	Natural stone walling, roughly chisel dressed on both sides and jointed in cement and sand (1:3) mortar 200mm foundation walling	LM	9		
8.1.8	Mass concrete class 15 (1:4:8) in 50mm thick surface blinding under strip footings	CM	0.35		

8.1.9	Mesh fabric reinforcement A98 to B.S 4483 (measured nett-allow for laps)	SM	15		
8.1.10	125 mm thick 1:2:4 (C20/20) vibrated RC floor slab over Kiosks and fetching bay areas	CM	1		
8.1.11	25mm thick Cement sand screed (1:3) finished with steel float.	SM	15		
BILL 8.2	**WALLING**				
8.2.1	Hessian based bituminous felt DPC 225mm wide horizontally placed below masonry walling	LM	10		
8.2.2	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	30		
8.2.3	Vibrated reinforced concrete 1:2:4 (class 20 (20/20mm) in Ringbeams	CM	0.4		
8.2.4	High yield square twisted steel reinforcement bars to BS 4461 including for cutting, bending to shape, tying, hooking and spacer blocks as described in:				
8.2.5	8mm diameter ditto	KG	10		
8.2.6	12mm diameter ditto	KG	50		
8.2.7	Sawn formwork to Sides of ringbeam	SM	2.7		
8.2.8	Horizontal key pointing in masonry joints in external wall surfaces	SM	27		
8.2.9	15mm thick Cement sand plaster to walls surfaces (1:3) finished to walls to receive paint internally	SM	30		
Item 8.3	**ROOFING:**				
8.3.1	50 x 50 mm purlins	LM	10		
8.3.2	75 x 50 mm rafters and wall plate	LM	10		
8.3.3	200 x 25 mm fascia board	LM	10		
8.3.4	Box profile 30G Sky Blue Smooth Roofing Sheet; Effective Cover Width (mm) is 1015 and Thickness (mm) is 0.25	LM	6.2		
8.3.5	Roofing Nails	KG	1		
8.3.6	Assorted Ordinary Wire Nails	Kg	5		
8.3.7	2.1M x 1M Standard steel door complete with frame, hinges latch bolts and padlock.	SM	1		
8.3.8	1M X 1M Standard steel window complete with frame hinges and latch bolts.	SM	1		
Item 8.4	**FINISHES:**				
8.4.1	METAL SURFACES: Prepare and apply three coats plastic enamel paint to General metal surfaces (both sides).- (Red oxide primer glossy)	SM	4		
8.4.2	INTERNAL PLASTERED WALLS: Prepare and apply three coats plastic silk emulsion paint to Plastered wall surfaces internally	SM	30		
8.4.3	EXTERNAL WALLS: Prepare and apply three coats permaplast external wall paint to Rendered sides of beam and walls externally	SM	7		
8.4.4	75 mm high mortar skirting	LM	9		
8.4.5	Provide materials and labour for branding as directed by the Project Manager. Inclusive County Logo and National Logo	No	1		
Item 8.5	**PLUMBING:**				
8.5.1	Supply, Deliver, joint and test 1.5 ”dia. G.I. Pipes, Class ’B’, 6m Long, for outlet of tanks to inside the kiosk	No.	2		

8.5.2	1.5″ diameter GI elbow	No	3		
8.5.3	1.5″ diameter GI union sockets	No.	4		
8.5.4	1.5″ diameter Gate valve	No.	1		
8.5.5	Water meter 1.5″ dia.	No.	1		
8.5.6	1.5" by 3/4" reducing socket G.I	No.	1		
8.5.7	3/4″ diameter assorted length G.I nipples	No	5		
8.5.8	3/4″ diameter GI Pipe class B	No.	1		
8.5.9	3/4″ diameter Gate valve-peglar type	No.	2		
8.5.10	3/4″ diameter valve sockets	No	2		
8.5.11	3/4″ diameter GI union.	No.	4		
8.5.12	3/4″ diameter GI Elbow	No	4		
Item 8.6	**Pipe joining material:**				
8.6.1	Boss white for G.I Pipes	Kg	1		
8.6.2	Solvent Cement	Kg	1		
8.6.3	Coolant	Lts	1		
8.6.4	Sealing thread	Pcs	2		
Item 8.7	**Tank and platform**				
8.7.1	Supply, Deliver & Install a 10m^3 Double Laminated Plastic Water Tank, c/w Inlet, Outlet & Overflow Fixtures, 2'' dia. c/w mounting of reinforced concrete slab, 1.5m high Masonry Platform. Allow for Riser Pipes, Assorted Pipe Fittings and Interconnect Appropriately & Test Flow to Storage Tanks; & connect to the water point	No	1		
	SUB TOTAL				

Bill 9.0 Rehabilitation of Kaasuvi Water Kiosk

S/No	Item Description	Unit	QTY		
9.0.1	Supply, Deliver & Install a 10m^3 Double Laminated Plastic Water Tank, c/w Inlet, Outlet & Overflow Fixtures, 2'' dia. interconnected with an existing tank c/w mounting on an extended reinforced concrete slab, 1.5m high Masonry Platform. Allow for Riser Pipes, Assorted Pipe Fittings and Interconnect Appropriately & Test Flow to Storage Tanks; & connect to the water point	No	1		
9.0.2	Water Kiosk Painting and Branding (Sekeleni and Kaasuvi Water Kiosk)	LS	1		
9.0.3	Branding	Item	1		
9.0.4	Supply, Deliver, joint and test 1.5 ″dia. G.I. Pipes, Class 'B', 6m Long, for outlet of tanks to inside the kiosk	No.	2		
9.0.5	1.5″ diameter GI elbow	No	3		
9.0.6	1.5″ diameter GI union sockets	No.	4		
9.0.7	1.5″ diameter Gate valve	No.	1		
9.0.8	Water meter 3/4″ dia.	No.	1		
9.0.9	1.5" by 3/4" reducing socket G.I	No.	1		
9.0.10	3/4″ diameter assorted length G.I nipples	No	5		
9.0.11	3/4″ diameter GI Pipe class B	No.	1		
9.0.12	3/4″ diameter Gate valve-peglar type	No.	2		
9.0.13	3/4″ diameter valve sockets	No	2		
9.0.14	3/4″ diameter GI union.	No.	4		
9.0.15	3/4″ diameter GI Elbow	No	4		
	Pipe joining material:				
9.0.16	Boss white for G.I Pipes	Kg	1		
9.0.17	Solvent Cement	Kg	1		
9.0.18	Coolant	Lts	1		
9.0.19	Sealing thread	Pcs	2		
	SUB TOTAL				

Bill 10.0 Pipeline Mark Posts

10.0.1	Mark Posts (Assorted)	No	47		

SUMMARY

Bill 1.0	PRELIMINARIES AND GENERAL ITEMS				
Bill 2.0	KIBOKO INTAKE WORKS				
Bill 3.0	KWA KIMOTE INTERMEDIATE SOLAR PUMPING WATER SYSTEM				
Bill 4.0	Construction of Kwa Kimote (From Distribution Chamber) - Kaasuvi Pipeline				
Bill 5.0	Construction of Kwa Kimote (From Distribution Chamber) - Ngulya Junction Pipeline				
Bill 6.0	Rehabilitation of Kimote tank				
Bill 7.0	INSTALLATION OF CUSTOMIZED CHEMICAL DOSING UNITS				
Bill 8.0	NGULYA WATER KIOSK				
Bill 9.0	Rehabilitation of Kaasuvi Water Kiosk				
Bill 10.0	Pipeline Mark Posts				
Bill 11.0	Contingency				
	Allow Kshs 120,500 for contingencies to be expended at the discretion of the project manager				
	TOTAL I				

	ADD				
	Public Procurement Capacity Building Levy (0.03%) of the Total Cost before tax				
	TOTAL II				
	ADD VAT (16%)				
	BUILDER WORKS GRAND TOTAL (Taken to Form of Tender)				