

BILL OF QUANTITIES FOR DRILLING, EQUIPPING & CIVIL WORKS FOR SUGURO(MUNANDA) COMMUNITY WATER PROJECT IN NAROK SOUTH - NAROK COUNTY					
ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
				(Ksh)	(Ksh)
1	PRELIMINARY & GENERAL				
1.1	Provide and erect two (2No.) publicity signboard as shall be directed by the project supervisor	No.	1		
1.2	Allow provisional sum to cater for project supervision from inception to completion	Item	PS	400,000	400,000.00
1.2	Allow provisional sum for monitoring and Evaluation	Item	PS	300,000	300,000.00
1.3	Allow provisional sum to cater for processing of WRA and other necessary permits and licences	Item	PS	50,000	50,000.00
1.4	Allow provisional sum to cater for Community sensitization and capacity building of the project PMC, commissioning and handover of the project	Item	PS	100,000	100,000.00
1.6	Add % to contractor profits and overheads to items 1.2 ,1.3, 1.4, and 1.5 above	%	18		
	TOTAL C/F SUMMARY				
2	BOREHOLE DRILLING				
2.1	Carry out confirmatory hydrogeological survey; submit three hydrogeological survey report hardcopies and one softcopy <i>NB:The Hydrogeological survey study report to be submitted for review and approval for Drilling to be commenced(3No. Hard copies and 1No. soft copy)</i>	No.	1		
2.2	Mobilization and Transportation of whole drilling unit to and from the site; rates include erecting and dismantling of the drilling rig unit at a site.	Item	L/S		
2.3	Drilling borehole of 204mm minimum diameter through all types of strata including disposal of excavated materials; taking any remedial measures to overcome caving- in , or over drilling to accommodate sloughed material and keeping drilling records as specified; taking and cataloging drill cuttings at 2m intervals <i>NB: Hydrogeological report recommendation should be adhered to</i>	m	250		
2.4	Supply and Install 152mm nominal internal diameter Plain Permanent Steel Casing include capping.As instructed by Geologist	m	160		
2.5	Supply and Install 152mm nominal internal diameter Slotted Permanent Steel Casings.As instructed by Geologist	m	90		
2.6	Supply and insert 6m, 18 inch diameter Temporary Steel Surface Casings As instructed by Geologist. <i>Kindly note this item require supervisor approval before installation</i>	No	2		
2.7	Supply and insert filter gravel packing 2mm to 5mm size.	Ton	8		
2.8	Grout between the inner casing and the outer surface casing for top Six (6) metres.	m	6		
2.9	Flush to develop the well in steps from low discharge to high discharge rate for a specified period as directed by the Engineer/Geologist	Hrs	5		
2.10	Test pump the well for 24hrs and observe recovery using the method as directed by the Engineer/Geologist while recording and cataloging the measurements.	Item	1		
2.11	Carry out physical and chemical analysis of the borehole water in an approved lab and submit lab analysis report in three copies	Item	L/S		
2.12	Supply materials and construct 1*1*0.3m concrete sanitary seal around the borehole.	Item	L/S		
	TOTAL C/F SUMMARY				
3	BOREHOLE EQUIPPING				

3.1	Allow Prime Sum for supply, installation, testing and commissioning of a submersible pump capable of pumping expected yield against a head to be identified, complete with solar system, solar pumping control unit and support structures 4 metres high, installation sundries, all accessories including cables, pipes and fittings. <i>NB:</i> <i>1. Designs for pump and solar must be approved by the Supervising Engineer.</i> <i>2. Warranty for Pump set and its accessories should be atleast 2years from the manufacturer/ supplier</i>	PS	1	3,000,000	3,000,000.00
TOTAL C/F SUMMARY					3,000,000.00
4	WATER KIOSK (with 10m³ plastic tank) <i>Note: Designs and Drawings must be approved by the Supervising Engineer</i>				
4.1	Supply and install 1No 10,000 litres plastic tank(UV resistant)	Item	1		
4.2	Light bush clearing	m ²	100		
4.3	Excavate top soil Average 150mm depth and cart away 5 meters for re-use.	m ²	9		
4.4	Excavate pit for 4No. 900 X 900 mm VRC columns starting at 150mm below ground level but not exceeding 1m depth.	m ³	4		
4.5	Excavate trench for strip foundation starting at 150mm below ground level but not exceeding 1m depth.	m ³	7.2		
4.6	Provide and lay approved hardcore 300mm thick layer on the strip foundation	m ²	9		
4.7	Provide and construct 200mm thick by 450mm wide strip foundation (1:3:6)	m ³	1		
4.8	Provide and construct foundation walling using dressed stones (9" X 9"), bedded in mortar (1:4)	m ²	6		
4.9	Provide and place 300mm approved hardcore and properly rammed.	m ²	12		
4.10	Provide and place 50mm blinding concrete(1:3:6)	m ²	12		
4.11	Provide and place damp proof membrane on the blinded surface	m ²	12		
4.12	Provide and place reinforced concrete floor (1:2:4) 100mm thick	M ³	1.2		
4.13	Construct 200mm thick walling with mortar (1:4) jointing. The external side of the walling is keyed to Engineer approval	m ²	23		
4.14	Provide and cast reinforced column 200mm by 200mm and 2640mm high .Rate inclusive of reinforcement bars-D12	m ³	1		
4.15	Provide and cast reinforced ring beam measuring 12m x 450m x 200mm (1:2:4). Rate inclusive of reinforcement bars-D12	m ³	2		
4.16	Provide and construct a reinforced 150mm thick roof slab using high yield reinforcement bars of 10mm diameter to be spaced at 150mm C/C both ways and be in the mix of 1:2:4 (VRC). The parapet of 150mm high and 150mm wide round must also be reinforced.	m ³	3		
4.17	Provide 100mm dia.semi circular drainage groove covered with removable steel grill casement draining into 600 x 600mm catch pit	Item	1		
4.18	Allow sum for construction of soak pit complete with steel casement and drainage pipe from the catch pit	Item	1		
4.19	Provide and apply 20mm thick plaster to Roof, floor and walls (1:4) mortar	m ²	40		
4.20	Provide, fabricate and fix steel casement door (2100mm x 900mm)	No	1		
4.21	Provide, fabricate and fix grilled steel casement window(1300mm x 1200mm high)	No	1		

4.22	Provide and apply three coats of paints on the internal walls and roof slab.The rate include branding the kiosk with Central Rift Valley Water Works Development Agency colour, code, Logo and Court of Arms as per the supervising engineer approval	m ²	40		
4.23	Provide and install 25mm diameter Consumer meter	No	1		
4.24	Provide and fix 20mm diameter back nuts	No	4		
4.25	Provide and fix 25mm diameter Elbows	No	6		
4.26	Provide and fix 20mm diameter Equal Tee	No	2		
4.27	Provide and fix 20mm diameter Ball Cocks	No	3		
4.28	Provide and fix 20mm diameter Union Sockets	No	2		
4.29	Socketed 25mm dia.GI from plastic tank to kiosk taps	m	6		
TOTAL C/F SUMMARY					
5	PIPELINE				
5.1	Rsing Main - 200m				
Excavation					
	Excavation and backfilling:Rates to include for all trimming to levels back filling with approved selection spoil, disposal of surplus material and reinstatement. Trench depth shall be average of 600mm and width not exceeding 450mm				
5.1.1	Trench and backfill for 63mm HDPE-PN12.5	m	200		
Pipe work					
	Supply, lay, joint, test and reinstate water pipes:Rates to include for jointing materials,cutting,threading, warning tape and wastage				
5.1.2	OD63mm dia.HDPE –PN12.5. Complete with Couplings	m	200		
5.1.3	DN50mm GI with fittings	m	24		
Pipe Fittings					
5.1.3	63mm dia. PE Adaptor	No	2		
5.1.4	2" dia.GI equal Tee	No	2		
5.1.5	2" GI elbow bend (90°)	No	4		
5.1.6	2" GI elbow bend (45°)	No	2		
5.1.7	2" Non-return valve	No	1		
5.1.8	2" Gate valve	No	4		
5.1.9	2" End cap	No	2		
Auxillary Works					
5.1.10	Supply materials and construct a standard masonry chamber with internal dimensions 1.0m by 1.0m complete with Manhole cover,painted with 3 coats of gloss paint blue in colour	No	2		
5.1.11	Supply,install and test DN25 Single Orifice Airvalve.Rate to include gate valve and other necessary fittings	No	2		
TOTAL C/F SUMMARY					
6	CONSTRUCTION OF A CATTLE TROUGH				
6.1	Excavate over site soil material to reduce levels not exceeding 225mm deep and cart away	m2	66		
6.2	Excavate for raft foundation not exceeding 1.0 meters deep starting from reduced levels.	m3	22		
6.3	225mm thick approved hardcore filling, leveled and compacted in 150mm layers	m2	22		
6.4	Level and blind surface of hardcore with 50mm thick 1:4:8 concrete mix blinding	m2	1.1		
6.5	Formwork to sides of floor slab 150mm thick	m	26		
6.6	Reinforcement bars y8 include for tying to floor slab	Kg	102		
6.7	Insitu reinforced concrete: (mix 1:2:4) grade 20(20mm aggregate): vibrated in foundation strip 150mm thick	m3	2.7		
6.8	6"x9" approved local stone; squared; and rough chisel dressed on one side, bedding and jointing in cement motar (1:3) in walls 150mm thick	m2	13		
6.9	Reinforcement bars y8. include for tying to walling	Kg	32		

6.10	Plaster, 9mm first coat of cement: sand (1;3) steel troweled in 25mm thick 2No. Coatwork to sides of cattle trough internally. Include for water proofing	m2	13		
6.11	Plaster 9mm first coat of cement sand (1:3) steel troweled in 25mm thick 2No. Coatwork to sides of cattle trough externally	m2	18		
6.12	Supply, deliver to site approved hardcore, place and join with 1:3 cement motar to form grouted riprap as directed . Include for leveling	m2	48		
6.13	Fabricate and install a 700mmX1000mm lockable 16g steel plate manhole cover framed and cross reinforced with 16g, 25mm hollow section steel cover.	No	1		
6.14	Fittings from the Tank to the trough <i>Supply. Lay and fix the materials. Rate to include labour. Matetrial to be approved by the supervisor</i>				
6.15	1 1/2 " Ø GI pipes "B"	No	2		
6.16	1 1/2 " Ø GI long nipple	No	4		
6.17	1 1/2 " Ø GI elbow	No	4		
6.18	1 1/2 " Ø GI backnuts	No	4		
6.19	1 1/2 " diameter union	No	1		
6.20	1 1/2 " diameter gate valve	No	1		
6.21	1 1/2 " Ø plain socket	No	1		
6.22	1 1/2 " Ø ball valve pegler	No	1		
	TOTAL CTC SUMMARY				
7	FENCE AND GATE				
7.1	<i>Provide, dig holes, install and fasten:</i>				
7.1.1	Excavate for, provide and erect chain link fence comprising concrete posts set 0.6m below ground, 1.8m Straight end, 0.6m Top Crank with concrete class 15 (1:4:8)surround, concrete posts at 3.0m centres. 14 gauge(6 feet) chain link , 4 No. plain wire strands threaded through holes in posts, 4 No. strands 12½ gauge barbed wire tied to cranked top and weave to form mesh, concrete strutting posts at corners and intervals as appropriate and as shall be directed by the Engineer. The rate to include for all the necessary excavation and disposal. <i>NB:Designs and Drawings must be approved by the Supervising Engineer</i>	m	100		
7.2	Gate				
7.2.1	Provide and install double gate of 4m wide X 2.0m high fabricated from dia. 50mm SHS (gauge 16) cut and welded to form 1.0m x 1.0m and 25mm x 25mm SHS cut and welded to form a mesh 150mm X 150mm Rate to include for 2No. 75mm x 75mm gauge 16 rectangular hollow section M.S. Gate posts and also to include for painting the gate with oxide primer and two coats of blue gloss paint <i>NB: Designs and Drawings must be approved by the Supervising Engineer</i>	Item	1		
	TOTAL C/F SUMMARY				
<i>NOTE: Equipping and civil works for the Mentioned borehole is depended on the success of the borehole, a dry borehole implies that the client cannot proceed on with the subsequent works. All prices are inclusive of VAT.</i>					
Sr/No	SUMMARY	AMOUNT (Kshs)			
1	Preliminaries and Generals				
2	Borehole Drilling				
3	Borehole Equipping	3,000,000.00			
4	Construction of Water Kiosk				
5	Pipeline Extension				
6	Construction of a cattle trough				
7	Installation of Fence and Gate				
	TOTAL				
	Add 5% Contingency				
	Add 0.03% Capacity Building Levy (Sub-Total				
	GRAND TOTAL C/F FORM OF TENDER				