

**Section 5a: Schedule of Requirements and Technical Specifications/Bill of Quantities (Lot 1)****Deep Well Rehabilitation Works in South Yap****Background**

Under this project UNDP aims to improve water supply and water security in the Southern Yap district for the villages Fedor, Yaboch, Tafnith, Darikan, Fara, Lamer, Luwech, Nel, Ngof, and Airport by rehabilitation and augmentation to the existing water supply system.

Currently only two of seven wells are operational and rehabilitation targets to get all seven wells operational. Development of an additional water source from the Quarry Pond under this project will provide for additional water supply into the network.

Water quality will be safe-guarded with chlorination of the well water supply and filtration/chlorination of the Quarry Pond water source.

**Information Brief on the Scope of Works****Rehabilitation of Wells and Procurement of a Drilling Rig**

The project includes to rehabilitate seven deep water wells. Currently two wells are in operation and these will be flushed with well detergent, and have new headwork installed under this scope of works and recommissioned to ensure a water supply while other works proceed.

**Repairs to existing storage tank**

Seven wells feed into the distribution line that supplies the 100,000 gallon Fedor storage tank. This concrete tank has a number of cracks that need to be repaired under this scope of works using special US crack seal epoxy.

**Additional Water Source**

The quarry pond at Fedor will be utilized as an additional water source and new works included under this scope of works mainly includes pump and pontoon installation at the quarry pond, construction of a WTP building and fences, supply and installation of storage tanks, installation of WTP pumps and filtration equipment, installation of delivery pipe work from the Quarry Pond to the WTP and from the WTP to Fedor tank, various electrical works etc.

**BOQ of Deep Well Rehabilitation Works in South Yap**

S.No	Details of Consrruction Works	Quantity	UOM
<b>1</b>	<b>Fence and gate works for Wells 3, 4, 5, 6 &amp; 7 &amp; WTP -</b>		
The Bidder shall procure for materials and equipment including labor and allow for installation for fence works as follows: Wells 3, 4, 5, 6 & 7. Each of these FIVE fences shall be 10' x 10' square and 7' high with the front being a 10' wide gate. All posts embedded 2' under ground in concrete. Plus allow for 7 nos. x 5' x 2" dia. posts to be embedded vertical at each well site (for mounting control panels). Allow for the WTP fence works (30' x 40') the following: 4 x 2" dia. x 8' corner posts, 8 x 2" dia. x 8' centre posts, 1 x 10'x7' high gate and associated hardware, 120' x 7' high chain link fencing, and top support rails 1" dia. for the chain link fence. Plus installation hardware. Gravel and cement mix for poles. Wells (5) - 20 x 2" dia. x 8' GI corner posts, 15 x 2" dia. x 8' GI center posts, 1 x 10' x 7' high GI gate and associated hardware, 150' x 7' high chain link fencing, and top support rails 1" dia. for the chain link fence. Plus installation hardware. Gravel and cement mix for poles. The rate shall include all the cost of materials and labor. Fig. 14 shows the location of wells and (picture)/Fig 1 & 2 shows site and sample of chain link fence respectively.			
1.1	2" dia heavy duty GI pipe works for fencing 3, 4, 5, 6,& 7 wells and WTP	<b>657.00</b>	<b>ft</b>
1.2	7' length x 6' high chain linked 11 gauge GI wire gate with proper frame	<b>252.00</b>	<b>sq ft</b>
1.3	6' high 11 gauge GI wire chain link fence with 1" dia heavy duty GI pipe top support for 5 wells and WTP compound	<b>1,788.00</b>	<b>sq ft</b>
1.4	M15 Concrete for pipe fixing (1'x1'x2' concrete below ground including excavation work for each post)	<b>128.00</b>	<b>cu ft</b>

**2 Construction of Chlorine Shed (Fig. 11), Chlorine Store (Fig. 12), and WTP Building (Fig. 13).**

The Bidder shall complete construction of small sheds - for chlorination at Well 1 (8'x6' and 8' max ht); chlorine store (10'x6' and 8' max ht); WTP building (12'x8.3' and 8' max ht); a slab for kitset shed concrete base (45'x24'x6") for 2000 gallon tank; and slab on every well 7(10'x7'x6"). The buildings would be concrete block shed of 7'-8' high, concrete base and a concrete sloping roof including concrete vent blocks. Doors, door frames and hardware shall all be heavy duty aluminum. Plans of building are attached herewith in figure 11, 12 and 13 and a sample picture is given in Fig. 5. Construction will be as per the drawing to be submitted by the bidder after award of contract for approval. The building shall be tied both vertically and horizontally by beams, ties and pillars. The job includes materials, scaffolding, equipments (vibrator, mixture, compactor etc.) and labor all complete.

2.1	The bidder shall levell the ground by cutting and filling and compacting it using compaction vibrator to make a strong base for the base slab of buildings.	303.00	sq ft
2.2	Concrete work M20 for base slab (6") and roof slab (4") including proper mixing, pouring, finishing using vibrator as per instruction including curing.	415.00	Cu ft
2.3	Reinforcing bars (12 mm for base slab, column & beams and 10 mm for roof slab) including cutting, bending, lapping and binding of bars as per drawings - prepared by the bidder and approved by UNDP after award of the contract.	1,826.00	Kg
2.4	Form Works shuttering and centering for slabs, beams and columns	1,128.10	sq ft
2.5	Concrete Block (16"x4"x4") wall for sheds in 1:5 cement sand mortar	718.00	sq ft
2.6	Cement plaster 1:4 on walls, floor and celing	2,595.10	sq ft
2.7	Net cement plaster (Punning)	208.00	sq ft
2.8	Supply materials and apply two of oil based (acrylic) Interior paint over one coat primar on interior surface wall and celing	870.00	sq ft
2.9	Supply materials and apply two coats exterior oil based paint over one coat primar all complete	755.00	sq ft
2.10	Heavy duty aluminium door including frames and fittings		
	Double door 72"x80"	1.00	set
	Single door 36"x80"	3.00	set
2.11	Vent blocks-four pieces in each block as shown in Fig. 5.	12.00	PCs
<b>3 Construct slab &amp; erect kitset shed</b>			
A kitset steel structured shed is provided, labor cost only. The Bidder shall allow for construction of a reinforced concrete base of dimension to the requirement of the kitset supplier to be			
3.1	The bidder shall levell the ground by cutting and filling and compacting it using compaction vibrator to make a strong base for the base slab of kitset.	1,080.00	Sqft
3.2	Concrete work M20 for base slab (6") including proper mixing, pouring, finishing using vibrator as per instruction including curing.	450.00	Cu ft
3.3	Reinforcing bars (12 mm Dia.) including cutting, bending, lapping and binding of bars as per drawings - prepared by the bidder and approved by UNDP	1,626.00	Kg
3.4	Cement plaster 1:4 on floor of kitset.	1,080.00	Sq ft
3.5	Net cement plaster (Punning)	1,080.00	Sq ft
3.6	Erect a Kitset shed x 3 berth. Material: Zinalume (see Fig. 9 example below). Typhoon proof rated.	1.00	Lot

**Note: Payment shall be made based on actual measurement of completed work in accordance with payment schedule.**