



AGRICULTURAL RESEARCH COUNCIL
NATURAL RESOURCES AND ENGINEERING
(Agricultural Engineering Campus)

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CLIENT REPORT: Specifications

**Nkomazi Agro Processing
Water reticulation system**

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November 2022

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AE Project No:
Pilot report

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1 Google Earth photo



2 Price breakdown

The ARC has a limited budget; therefore, the tenderer must give a price breakdown as shown in Table 1. The ARC has the right to choose only certain aspects of the quotation as set out in Table 1. One contractor will do all the work selected. The remaining items will go on a new tender process in the next financial year.

Table 1

	Item	Quoted price (VAT excluded)
1.	Borehole pump, Generator and safe	R
2.	Wheel barrow	R
3.	Jerry can for fuel	R
4.	Pressure pump and instalment of water reticulation system	R
5.	Drip tray and installation of tray	R
Total (Vat excluded)		R
Vat		R
Grand total		R

3 Bore hole



3.1 Security

To secure the borehole equipment, all the equipment will be stored in a safe that is bolted with 4 * M12 bolts to a baseplate that is welded to the borehole casing. All control system and wires must be lock away in this safe when not in operation.

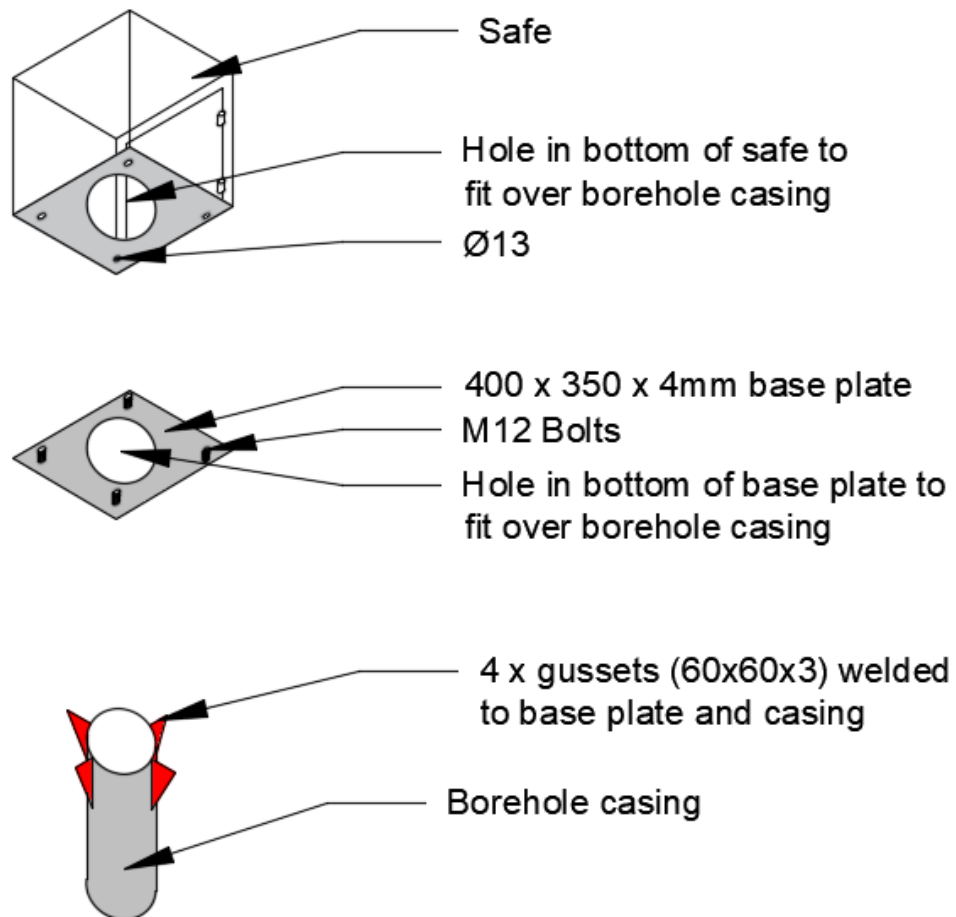
To power the bore hole, a generator must be mounted to a wheel borrow. A steel cage for a jerry can must be manufactured and mount on the wheelborrow.

3.2 Borehole pump, motor and control gear

- Supply and install a bore hole pump, 0.75 kW submersible motor and cable and controller
- Ski rope to fasten pump to surface
- Connect to existing pipe line to facility
- Manufacture with stainless steel
- Similar or equal to Franklin SVM 10004/037
- Height difference between top of borehole and bottom of tank = 21m
- Dept of borehole ± 30 m
- All equipment must fit in the safe
- Similar or equal to: https://www.waterpumps.co.za/product/borehole-pump/?utm_source=google&utm_medium=cpc&utm_campaign=google_smart_shopping&gclid=CjwKCAjw8JKbBhBYEiwAs3sxN0iSC3XZY3GwjL2MnPIZERlq28wJS_qCavXHfSrRBeWUbSf-5ruKNhoCBcYQAvD_BwE

3.3 Protection of pump and equipment

- Safe
- 7 lever lock system with two keys
- Theft resistance
- SABS SANS compliance
- 3mm body
- 6mm door
- Similar or equal to Magnum Safes Handgun Safe 400 x 400 x 350mm MP2 (https://www.chamberlains.co.za/magnum-safes-handgun-safe-400-x-400-x-350mm-mp2-1084801?gclid=CjwKCAjwh4ObBhAzEiwAHZyUyXSFdbQo5wekQAIYIkIAfZrjAjDu7pSFLAYNKkXhY-tnWDYyD5UphoCdUwQAvD_BwE)



3.4 Generator

- 230V, 5.5 kw Diesel generator
- 4 stroke Petrol engine
- 6.3 kVA
- Single phase
- 4 stroke
- Electric/ key start
- 50 hz Frequency
- Generator must come complete with all liquids (Full tank diesel and oil to start)
- Similar or equal to <https://www.adendorff.co.za/product/mac-afric-6-3-kva-5-kw-standby-petrol-generator/>

3.5 Wheelbarrow

- Generator must be driven with generator that is bolted to a wheelbarrow
- Flatpan wheelbarrow
- Steel pan gauge minimum 0.8mm
- Pan rim, minimum 5.5mm steel reinforced
- Pan capacity Minimum 44L

Similar or equal to https://www.for-the-farmer.com/products/wheelbarrow-falcon-flatpan?variant=17411754623094¤cy=ZAR&utm_medium=product_sync&utm_source=google&utm_content=sag_organic&utm_campaign=sag_organic&utm_campaign=gs-2020-01-

[31&utm_source=google&utm_medium=smart_campaign&gclid=CjwKCAjwzY2bBhB6EiwAPpUpZhyfrn0puRvnSb2x_64hC8y_LAI3t3d7So22ck5DDUgw3aTB5OEnZRoClw8QAvD_BwE](https://www.google.com/maps/@-25.7954,31.9167,31&utm_source=google&utm_medium=smart_campaign&gclid=CjwKCAjwzY2bBhB6EiwAPpUpZhyfrn0puRvnSb2x_64hC8y_LAI3t3d7So22ck5DDUgw3aTB5OEnZRoClw8QAvD_BwE)

3.6 Jerry can for diesel fuel

- Tank capacity 20 Liter
- Steel thickness, minimum 0.8mm
- Supply full of fuel for generator
- Steel cage manufacture with 25 x5 flat bar to hold jerry on to wheelbarrow
- Steel cage mounted on wheelbarrow

4 Water reticulation system

- Install new inline valve to existing crop water tanks
- Install new underground 40mm, class 10 HDPE pipe, 840m long from crop water tanks to building water tanks
- Install building water tanks (ARC to supply)
- Connect water reticulation system from building water tanks to building water supply via Pressure pump
- Pressure pump must be installed in store room in geyser drip tray
- Pipes must be on the cement (not hanging in the air)
- Geyser drip tray outlet must the outside of the building
- COC plumbing and electrical require before payment will be considered



Photo: Existing platform for water tank. Room for pressure pump is in the building next to the tank

4.1 Pressure pump

- Minimum motor power 0.75kW
- Maximum operating. pressure 3.5 bar
- Include flow control that switches the pump on when the flow is needed (Taps are open) or it shuts off the pumps when the flow has stopped (Taps are closed).

Similar or equal to: <https://www.adendorff.co.za/product/mac-afric-0-75-kw-single-stage-water-pump-with-flow-control-switch/>

