

## **LWUA 2020 SOCIAL COMMUNITY WATER SUPPLY PROJECT SUMMARY (SDM)**

### **MOTLOULELA:**

**H12-1278**



- The mono pump was removed and the borehole was equipped with a submersible pump.
- A 90m pipeline was installed to the existing riser that supplied water to two 10M3 PVC tanks from the Sandpoint H12S1342.
- The electrical supply point is 220m from the borehole and the cable installed but ESKOM did not installed the meter box at the existing transformer; therefore the borehole is not operational
- The equipment was tested with a generator and the equipment is working correctly.
- The borehole is equipped with a SVM55/ 20 and a 1.1Kw Franklin motor to supply the 1.8M3/hour at a 100m duty point.
- Recommended yield for this borehole is 0.5l/s at a 24-hour duty cycle and a pump setting of 42m is recommended and the borehole was equipped accordingly.
- An additional manhole was installed as a valve box on the connected pipeline from the H12S1342 riser-main; because SDM indicated the connection should have never happened and therefore the borehole will be used for these PVC tanks when operational.





- The existing pipeline is a 110mm UPVC pipe and the concrete reservoir is approximately 4.3km from the caisson.
- The new Motlouloula-sump pump inside caisson is a SVM 285/32 pump with a 7.5Kw Franklin Motor and the pump is designed for a duty point of between 130m and 140m.
- The recommended yield for the caisson is 2l/s as derived from the yield testing but the pump is selected at 2.5 to 3.3l/s due to the completed fixing/cleaning of the caisson that were done as part of project to increase yield;
- Electrical problems were encountered from the ESKOM supply and after three attempts by ESKOM the problem was seemingly fixed at the links from the transformer.
- The pipes and the electrical cable from the caisson was also washed away during a flood event and steel pipes were installed from the caisson into the river bank and additional guards was installed at and around the caisson to protect the manhole covers and pipes from accumulating debris during floods.
- Another manhole was installed near the borehole H12-1278 on the caisson riser pipeline with a flow meter.
- The control panel was installed inside the small brick building next to the ESKOM transformer.
- The pipework at the concrete reservoir was replaced and the reservoir was cleaned through removing a large volume of mud.
- Locking devices for various taps was supplied to the community for regulating their distribution easier and more effectively.

## **MODUBENG (Modubeng/Makgwahla; Lwaleng/Schwiting and Senyatho)**

### **H12-2865**



- The borehole is equipped with a SVM240/20 and a 3.7Kw Franklin motor to supply the 9.0M3/hour water at a 90m duty point.
- The Modubeng community is divided into three sections although only two (Modubeng/Makgwahla and Senyatho) sections were addressed during this project. The Lwaleng / Schwiting portion is approximately 3km away towards the north-east along the River.
- Borehole H12-2865 is one of four boreholes drilled into the alluvium of the Olifants River and although these boreholes are good yielding it is not yielding sufficient water to supplement the LWUA plant during extreme draught periods.
- This borehole is only 8m deep with a water level of 2.1m but has very good water quality (Class-1) and is recommended to supply up to 5.8l/s (20.8M3/hour) at a 24-hour duty cycle although equipped to supply 9M3/day due to existing infrastructure used.
- Most other boreholes within the area are Class-2 or worse due to higher TH and/or TDS/Cl values.
- This borehole was equipped to either supply water to the Makgwahla and/or Senyatho portions through a newly installed valve box with flow meters and various valves.
- Especially towards the Senyatho portion, the water is pumped into a large network of reticulation pipelines and these pipelines are as small as 20mm HDPE pipes thus restricting flow and the supply to the two 10M3 tanks.
- A new 63mm pipeline was installed from the borehole inside the river to the valve box approximately 600m from the borehole where it is connected to the existing riser pipeline systems towards the Makgwahla and Senyatho portions.





- The well / caisson is recommended to supply 1.6l/s at a 24-hour duty cycle and a pump setting of 6m.
- This borehole is only 6.8m deep with a water level of 3.5m and has Class-2 water. It is recommended to supply 1.6l/s (5.7M3/hour) at a 24-hour duty cycle although equipped with a large 15Kw pump and supply much more water although it is set on a timer and does not pump continuously.
- This borehole was previously the only water source and was equipped to either supply water to the Makgwahla and/or Senyatho portions and can currently also through the newly installed valve box with flow meters, pressure gauge and various valves.
- The same pump house utilized for this borehole is also used for the control panel and flow meter of borehole H12-2685
- The most south-western 10M3 PVC tank at the Makgwahla portion of the community was upgraded through installing a new 3m stand because the existing tank stand was badly rusted.
- The two 10M3 tanks and stands at the Senyatho portion were also replaced.
- At the Senyatho portion it should be considered to install a ring feed pipeline from larger pipe lines to the ends of a few 20mm pipes to feed water from both sides of the small reticulation and to get water into the newly erected 10M3 tank on a 6m stand at the school.
- Pressure gauges was installed on the riser pipeline towards the Senyatho portion to establish the pressure differences at certain points.

## **MALOKELA (Ga-Mampa, Molapong, Phukubjeng, Sekwakwaile, Matshelapata portions)**

**H12-3011**



- The borehole is equipped with a SVM 55/39 pump and a 2.2Kw motor to supply the recommended 0.7l/s from the 84m pump setting at a 135m duty point.
- The borehole approximately 300m from the ESKOM transformer.
- The existing riser pipeline is 220m from the borehole and a 50mm pipeline was installed from the borehole to the existing 75mm UPVC riser pipeline.
- The existing pipeline is a 75mm UPVC pipe and the distance from the connection point to the reservoir is approximately 1200m.
- The borehole is operational

### **H12-3010**



- The borehole H12-3010 is equipped with a SVM240/28 pump and a 5.5Kw Franklin motor to supply the recommended 2.5l/s at a 24-hour duty cycle at the 90m pump setting.
- The equipment is designed to supply the 9M3/hour water at a 120m duty point at the concrete reservoir / steel reservoir and booster pump.
- The borehole is connected to the transformer approximately 1040m away.
- The 63mm HDPE pipe is installed and connected to the existing 75mm UPVC pipeline 1020m from the borehole near the power source.
- The existing 75mm UPVC pipeline is approximately 1300m long and the water is supplied into the same concrete reservoir where borehole H12-MAL-NEW-1 is pumping into.
- This borehole is operational although final settings on the electrical control system will be made after the equipment is running for a week or two



## MAL-NEW-1



- This borehole is the re-drill for the collapsed borehole H12-2348
- The installed pump is a SVM 285/14 model and is driven by a 3.0Kw Franklin motor to supply the recommended 3L/S at the 54m pump setting.
- Elevation difference from Borehole to reservoir is calculated as 55m and could be less when water is pumped to only the concrete reservoir close to the tar road situated approximately 30m lower in elevation.
- This borehole is connected to the existing pipeline approximately 5m away passing by this borehole from the collapsed borehole H12-2348.
- The power source previously used for borehole H12-2348 was used again for this borehole and the transformer is approximately 40m from the borehole.
- This borehole is operational