






LWUA 2020 COVID-19 EMERGENCY WATER SUPPLY PROJECT SUMMARY (SDM)

MAGOBADING

ITEM NO	PROJECT NAME	WATER DEMAND PER DAY	BH NUMBER	LONG	LAT	PHOTO	RESULT	AVAILABLE VOLUME (l/d)	FINAL GROUNDWATER ABSTURCTION
1	Magobading	91200							
			H12-2507 / H12-2598	30.097528	-24.358694		Good yielding - Max yield during steps 11l/s. Class-02 chemistry TH=405mg/l	198720	2.3l/s for 24-hours (198.72Kl/day)
			MAG-NN1	30.095500	-24.360389		3l/s maximum yield during steps. Class-02 chemistry TH and Mg	51800	0.6l/s for 24hours, 51.8kl/day.
			MAG-NEW1	30.082861	-24.363568		3.1l/s pump suction Good yielding source. Class-3 (TH & N)	155520	1.8l/s for 24hours (155.5kl/day) New bh drilled to supply the portion of the community south east of the tar road



- Boreholes MAG-2507 & MAG-NN1 was not upgraded through LWUA but was upgraded through a project sponsored by the Mine
- Both these boreholes was in use and supply water to an existing concrete reservoir within the north-eastern part of the community approximately 2.7km from the boreholes
- Borehole MAG-NEW1 was equipped through LWUA and awaits the ESKOM connection 380m from the borehole at an existing transformer. ESKOM should install a meter box for the billing to SDM on SDM account.
- Borehole was equipped according the above recommendation; 3Kw Franklin motor; SVM 150/26 pump at 90m duty point (6.5M3/hour).
- 2.6km pipeline was installed 50mm to new tank and 40m to furthest LWUA tank.
- The installed pipeline also connect two 10M3 LWUA tanker tanks and an additional 10M3 tank was installed on a 3m stand between the two tanker tanks
- The installation could not be completed due to the outstanding ESKOM power.

MOSHIRA

ITEM NO	PROJECT NAME	WATER DEMAND PER DAY	BH NUMBER	LONG	LAT	PHOTO	RESULT	AVAILABLE VOLUME (l/d)	FINAL GROUNDWATER ABSTRACTION
2	Moshira	65520							
			H12-1288A	30.104889	-24.355528		Borehole H12-1288 was redrilled by SDM and a 3.1l/s constant was done by a (Unknown testing contractor) Class-2 (TH)	172800	LWUA upgraded the borehole with SDM equipment (2l/s 24hours) - Report from Ntshiana Trading Enterprise
			H12-2877	30.109390	-24.352999		1.1l/s constant Class-2 (TH)	43200	0.5l/s 24-hours New bh drilled and equipped




- **SDM installed a new pump and motor at borehole H12-1288A.**
- **LWUA upgraded borehole H12-1288A with a new control panel as electrical protection and a new lockable manhole.**
- **This borehole supply water to a concrete reservoir through an existing 2.2km pipeline towards the north-western side of the community.**
- **Borehole H12-2877 was drilled and then newly equipped by LWUA with SVM50/20 pump and 1.1Kw Franklin motor to supply 1.8M3/hour at a 100m duty point.**
- **A new 50mm x 800m pipeline was installed to a newly erected 10M3-tank on a 6m stand and then connected to the existing reticulation system to assist with water supply to the southern part of the community.**
- **The power supply cable is installed to an existing transformer approximately 460m from the borehole but we await the installation of a meter box for the ESKOM billing to SDM.**
- **The installation could not be completed due to the outstanding ESKOM connection.**
- **Possible solution is to install an additional trench to the existing transformer at Bh H12-1288A – 380m distance and 150m cable.**

KGOPANENG

ITEM NO	PROJECT NAME	WATER DEMAND PER DAY	BH NUMBER	LONG	LAT	PHOTO	RESULT	AVAILABLE VOLUME (l/d)	FINAL GROUNDWATER ABSTRACTION
3	Kgopaneng	128640							
			H12-1499	30.190944	-24.399972		6.3l/s pump suction Good yielding source, CLASS-03 Chemistry Nitrates 35.72mg/l	207400	2.4l/s for 24-hours (207.4Kl/day)
			H12-1701	30.179972	-24.389611		1.27l/s pump suction (Class-1)	34600	0.4l/s for 24-hours, (34.6Kl/day) await chemistry



- Borehole H12-1701 is in use and supply a separate portion of the Kgopaneng community approximately 800m away towards the northwest.
- No upgrading to this source was done
- LWUA upgraded borehole H12-1499 through installing new submersible equipment and replaced the transformer
- This borehole was previously used for agricultural purposes but was not used for many years and it was suggested to utilize the borehole for water supply to the community and equipped with 3.7Kw Franklin motor and SVM240/20 pump.to supply 8.6M3/hour and 90m duty point.
- A new 50mm x 650m pipeline was installed to two newly erected 10M3 tanks on 3m stands and then connected to the existing reticulation system to assist with water supply to the central and southern portions of the community.
- The approximately 20m power supply cable is installed and the installation of the transformer is in progress. The installation was therefore not tested yet.
- After the borehole is operational the potential to connect to a 10M3 LWUA tanker tank from the reticulation system will be investigated

GA-MAPURU

ITEM NO	PROJECT NAME	WATER DEMAND PER DAY	BH NUMBER	LONG	LAT	PHOTO	RESULT	AVAILABLE VOLUME (l/d)	FINAL GROUNDWATER ABSTRACTION
5	Ga-Mapuru	344880							
			Gam-2	30.037970	-24.870370		2.5 l/s constant yield (Class-0)	51840	0.6 l/s 24 hrs/day
			Gam-1 H02-1830	30.105220	-24.807150		2.5 l/s constant yield (Class-3)	77760	0.9 l/s 24 hrs/day
			DS-1 (Ga1-235) / GA-01	30.029820	-24.88018		3.7l/s blow yield (Class-1)	138240	1.6 l/s 24 hrs/day



- Two boreholes Gam-2 and Gam-1 (H02-1830) was upgraded and the newly drilled borehole DS-1 (Ga-1-235) equipped according the above recommendations. Gam-1 was equipped with a SVM 100/27 and 2.2Kw motor to supply water at a 130m duty point.
- No pipelines were replaced at Gam-2 and Gam-1 (H02-1830) but a new 50mm x 310m pipeline was installed to supply water to a newly erected 10M3-tank on a 3m stand at the school. The new borehole was equipped with an SVM 100/07 and a 0.55Kw Franklin motor to supply 4.6M3/hour at a 30m duty point.
- We await the connection and meter box from ESKOM at the existing transformer approximately 140m from the borehole GA-01. The equipment was tested with a generator and final commissioning will be done as soon as ESKOM has connected the power.
- The community indicated that the two boreholes Gam-2 and Gam-1 (H02-1830) supply less water than before however the boreholes were equipped according the Golder associates recommended abstractions and the test results indicated the pump inlet (maximum yield) of Gam-1 (H02-1830) is 3.2l/s and for Gam-2 is 3.3l/s. Gam-2 was equipped with a SVM 100/14, 1.1Kw motor to supply water at a 75m duty point.

GA-KGOETE

ITEM NO	PROJECT NAME	WATER DEMAND PER DAY	BH NUMBER	LONG	LAT	PHOTO	RESULT	AVAILABLE VOLUME (l/d)	FINAL GROUNDWATER ABSTURCTION
6	Ga-Kgoete	287760							
			H12-1219	30.106680	-24.453900		10l/s pump suction High yielding source	121000	1.4l/s x 24hrs/d (121kl/d) Class-2
			H12-2913	-24.433726°	30.085629°		9.8l/s pump suction Good yielding source	116600	1.35l/s x 24hrs/d (116.8kl/d) (Class-2)



- Both the above boreholes were upgraded but not to the above recommendations; however telemetric systems and protection were installed.
- Borehole H12-2913 supply water to three separate storage facilities of which two are 2 x 2 sets of PVC tanks south-west of the R37 road and a third supply point is a concrete reservoir north-east of the community but the pump size and Kw is unknown.
- The existing pump was not replaced at borehole H12-2913 and no pipelines were installed.
- The four PVC tanks were leaking allot and these leaks were repaired during the upgrading phase.
- The telemetry and pressure regulating valves are set as such to regulate the flow between the three storage points.
- Borehole H12-1219 was equipped according the above recommendation but on request from the community the new pump was removed and the original pump was installed – It is known to be a 9.3Kw motor but the pump details are unknown.
- SDM and the community should take note that this borehole H12-1219 might be over pumped and should monitor the situation especially should the borehole be pumped at a 24-hour duty cycle at the higher yield.
- Both these boreholes are operational

MANOKE

ITEM NO	PROJECT NAME	WATER DEMAND PER DAY	BH NUMBER	LONG	LAT	PHOTO	RESULT	AVAILABLE VOLUME (l/d)	FINAL GROUNDWATER ABSTRACTION
7	Manoke	77760	H12-2323 Redrill	30.31811	-24.63342		Blow yield 5.5l/s	155520	1.8 l/s 24hrs/day (Class-3) N = 27.3mg/l
			(DS-1) BH Nr-MA-01	30.32401	-24.61576		Blow yield 9.2l/s	25920	0.3 l/s 24 hrs/day (Class-3) F = 3mg/l



- No borehole was upgraded through LWUA but the upgrading of the existing “Package plant” is in progress.
- The upgrading of the Package-plant involved the following:
 - Replacement of the suction point inside the river through a floating pond, steel frame as stabilizer for the pond,
 - Pipelines to the raw water booster pump and booster pump,
 - Pipework to and at the plant,
 - Upgrading the filter system through replacing the sand, pipework and leaks on the cylinder,
 - Upgrading / servicing of the booster pumps supplying water to the concrete reservoir
- The raw water booster pump was tested and supplies approximately 9l/s to the package-plant. We estimate at least 6l/s should reach the concrete reservoir soon.
- The upgrading is nearing completion however burst riser pipes and other minor problems were encountered during the testing phases.

GA-RIBA

ITEM NO	PROJECT NAME	WATER DEMAND PER DAY	BH NUMBER	LONG	LAT	PHOTO	RESULT	AVAILABLE VOLUME (l/d)	FINAL GROUNDWATER ABSTRACTION
12	Gakhulwane / Ga-Riba	63360	H12-0784	30.21831	-24.55939		6.0l/s Pump suction yield	129600	1.5l/s for 24 hours (129.6Kl/day)
			H12-1448	30.21328	-24.55922		>7l/s Pump suction yield	172800	2.0l/s for 24 hours (172.8Kl/day)


- Both the above boreholes were upgraded according the above recommendations and telemetric systems were installed.
- Borehole H12-0784 was equipped with a VSP 406-34 pump and 4Kw motor to supply water at a 140m duty point.
- Borehole H12-0784 supply water to a concrete reservoir towards the east of the community and supply water to the central and south-western portions of the community.
- Borehole H12-1448 was equipped with a VSP 408-32 pump and 5.5Kw motor to supply water at a 160m duty point.
- Borehole H12-1448 supply water to a concrete reservoir north-east of the community and supply water to the central, northern and north-western portions of the community.
- The existing pumps at both these boreholes were replaced and are operational.
- No boreholes were equipped at the Gakhulwane community situated approximately 1.5km south of the Ga-Riba village.
- At the Gakhulwane community an existing borehole is present but the community indicated it is situated inside a private yard and the pump has broken off inside the hole; therefore this borehole needs to be re-drilled.

GA-PODILE

ITEM NO	PROJECT NAME	WATER DEMAND PER DAY	BH NUMBER	LONG	LAT	PHOTO	RESULT	AVAILABLE VOLUME (l/d)	FINAL GROUNDWATER ABSTRACTION
14	Ga-Podile	60000							
			H12-1330	30.17319	-24.45997		7.4l/s Pump suction yield	198700	2.3 l/s for 24 hours (198.7Kl/day) pump cycle (Class-2)
			H12-1332	30.17762	-24.48794		Not tested Previous recommendation used	13000	0.15l/s for 24 hours (13.0Kl/day) (Class-2)



- The transformer at borehole H12-1330 was stolen and the borehole is currently operated via a SDM diesel engine connected to the mono pulley through a hole made through the concrete pump room. This is an engine mounted on a trailer that is removed and brought back for pumping on a weekly / monthly basis.
- To enable the upgrading of borehole H12-1330 we need the transformer installed because should we start the upgrading sooner the community could be without water for a long period.
- Borehole H12-1332 an obstruction was encountered a shallow depth but after the obstruction was cleared the borehole was equipped and supply water to a newly installed 10M3 PVC tank approximately 50m from the borehole.
- Borehole H12-1332 previously supplied water to a concrete reservoir approximately 400m away but due to its low yield it was equipped with a SVM30/13 pump and 0.37Kw Franklin motor to supply water at a 50m duty point to the new PVC tank.
- The reticulation system at this village is badly damaged and it will not be possible to supply water from the good yielding borehole H12-1330 through the existing system to the central and southern portions of this community.

MAKUBU (SEHLABENG)

ITEM NO	PROJECT NAME	WATER DEMAND PER DAY	BH NUMBER	LONG	LAT	PHOTO	RESULT	AVAILABLE VOLUME (l/d)	FINAL GROUNDWATER ABSTRACTION
15	Sehlabeng / Makubu	59040							
			H12-2979	30.212778	-24.424583		1.21l/s pump suction Class-2 (TH & N)	69100	0.8l/s for 24hrs (69.1kl/day)

- LWUA upgraded borehole H12-2979 through installing new submersible equipment and electronic electrical protection with control.
- This borehole was previously utilized for water supply to this community and currently equipped with a new 2.2Kw Franklin motor and SVM150/19 pump to supply 2.88 M3/hour at between a 65 and 100m duty point.
- Although the final total designed head is 85m (40m dynamic water level + 45m elevation difference between borehole and four new PVC tanks); the duty point will differ due to the more than five delivery points at different elevations.
- The existing pipeline network was used and a new valve box was built over the existing manually operated valves. New valves was also added
- This installation is operational and supply water to at least four sets of separately located existing PVC water tanks and also to additional four newly erected 10M3 PVC tanks on 3m stands.
- The LWUA tanker-tank was also connected to the existing system and four sets of taps was added next to the newly erected PVC tanks.

MANTJAKANE

ITEM NO	PROJECT NAME	WATER DEMAND PER DAY	BH NUMBER	LONG	LAT	PHOTO	RESULT	AVAILABLE VOLUME (l/d)	FINAL GROUNDWATER ABSTURCTION
16	Mantjakane	77520							
			H12-3069	30.06140	-24.48970		7l/s pump suction (Class-3)	112300	1.3l/s x 24 hrs/d (112.3kl/d)
			H12-2160	30.047650	-24.457070		5.1l/s pump suction Class-2	127000	1.47l/s x 24hrs (127kl/d) to equip


- Although the above groundwater sources were investigated, tested and a borehole re-drilled through LWUA; no boreholes were upgraded.
- Apparently one or possibly both the above boreholes were upgraded / equipped through a Mine.

MAKGEMENG

ITEM NO	PROJECT NAME	WATER DEMAND PER DAY	BH NUMBER	LONG	LAT	PHOTO	RESULT	AVAILABLE VOLUME (l/d)	FINAL GROUNDWATER ABSTRACTION
17	Makgemeng	92160							
			H12-2269	30.192710	-24.631740		Test denied by chief But later tested with exist equipm (Class-2)	432000	Main water supply for village - working condition - Was previously recommended for 9l/s at a 24-hour duty cycle and through yield test with existing equipment confirmed to still being at least 5l/s
			MAK-1/250 DS-1 (MK1-250)	30.205740	-24.63924		2.2l/s blow yield (Class-1)	51840	0.6 l/s 24 hrs/day



- Borehole DS-1 (Mak-1/250) was drilled within an area with no water or reticulation system; it was also drilled where no ESKOM power is available.
- The suggestion was to equip this source with solar equipment but due to the potential risk for theft it was not considered. However the indications are that the ESKOM power will soon be installed towards this area and then the equipping of this source can be reconsidered.
- Borehole H12-2269 was equipped with mono-type pump and SDM indicated constant failures due to broken fan-belts and the borehole was therefore equipped through LWUA with submersible equipment and telemetry with electrical protection was installed.
- This borehole was equipped with a VSP 6017-20 pump and 11Kw motor at a 150m duty point to supply 16.2M3/hour.
- No pipelines were installed and the borehole supply water to a brick reservoir approximately 1.5km from the borehole through a 63mm pipeline.
- The borehole H12-2269 is operational.

HWASHI

ITEM NO	PROJECT NAME	WATER DEMAND PER DAY	BH NUMBER	LONG	LAT	PHOTO	RESULT	AVAILABLE VOLUME (l/d)	FINAL GROUNDWATER ABSTRACTION
20	Hwashi / Difagate	50400							
			HW-3	30.114240	-24.638070		0.5 l/s blow yield	34560	0.4 l/s 24 hrs/day (Class 1)




- No existing boreholes are present at this community and the community only received water via tankers.
- Borehole HW-3 was drilled towards the south-eastern side of the community.
- At first the intention was to equip the borehole to supply water at the previous storage tank position approximately 270m from the borehole.
- The design was adjusted to supply water to the LWUA tanker tanks approximately 780m towards the central portion of the community.
- The 50mm pipeline was installed and the borehole equipped; however the ESKOM connection to the existing transformer is outstanding and therefore the borehole is not operational.
- The community also requested another extension of the pipeline to a second LWUA tanker tank but this is not yet discussed and will most probably not be considered before the borehole is operational.
- The borehole is equipped with a SVM 55/20 pump and 1.1Kw Franklin motor to supply 1.8M3/hour at a 100m duty point.
- This community is struggling without water

LEGABENG

ITEM NO	PROJECT NAME	WATER DEMAND PER DAY	BH NUMBER	LONG	LAT	PHOTO	RESULT	AVAILABLE VOLUME (l/d)	FINAL GROUNDWATER ABSTRACTION
25	Legabeng	48000							
			H12-3070	30.093061°	-24.523132°		2.5l/s pump suction	45800	0.53l/s x 24 hrs/day (45.8kl/d) (Class-2)
			H12-2698	30.081740	-24.528390		1.92l/s pump suction	28500	0.33l/s x 24 hrs/d (28.5kl/d) upgrade as emergency (Class-2)



- Borehole H12-2698 is in use and although not good yielding it supply water to the southern section of the community through an elevated steel tank. No upgrading was done at this borehole.
- Borehole H12-3070 was newly drilled through LWUA and equipped.
- This borehole is quipped to supply the 1.8M3/hour water to two PVC tanks on a slab at the northern side of the community approximately 530m from the borehole through a 330m x 50mm pipe and 200m x 63mm section.
- The borehole is equipped with SVM 70/30 pump and 2.2Kw Franklin motor at a 150m duty point and is operational.
- The 330m pipeline from the borehole was newly installed inside a trench with the electrical cable and the 200m x 63mm section is an existing HDPE pipe on ground level.
- The Councillor requested a pipeline connection between the two portions of the community especially to assist the southern part of the community through a tap. The approximately 900m pipeline was approved and is in progress.

TSWERENG

ITEM NO	PROJECT NAME	WATER DEMAND PER DAY	BH NUMBER	LONG	LAT	PHOTO	RESULT	AVAILABLE VOLUME (l/d)	FINAL GROUNDWATER ABSTURCTION
29	Tswereng	60000							
			H02-2746	30.022778	-24.288556		2.7l/s pump suction, Class-03 (TH & N)	51800	0,6l/s for 24 hours, (51.8Kl/day) To redrill in order to have more available drawdown. Treatment needed
			H02-TSW-4	30.017972	-24.273611		4.1l/s pump suction. Class-03 (TH, EC & Nitrates)	155520	1,8l/s for 24 hours/day, (155.5Kl/day) Redrilled in order to have more available drawdown
			H02-3792	30.017972	-24.273500		4ls blowyield (Class-3)	86400	1.0l/s for 24 hours, (86.4Kl/day) Treatment needed

- Boreholes H02-2746 and H02-TSW-4 is existing boreholes and although they were operational the equipment is in a poor state and borehole H02-TSW-4 did show signs of collapsing during the testing phase.
- Borehole H02-3792 is a re-drill for borehole H02-TSW-4 and was also drilled to act as a standby source not only to supply the current section of the community but also to potentially assist the northern portion of the community.
- Borehole H02-TSW-4 supply water into four PVC tanks and an elevated steel tank within the north-western part of the community but situated at a lower elevation as the northern part.
- Borehole H02-2746 supply water to two separate reservoirs situated within the eastern and south-eastern parts of the community but the borehole is not high yielding.
- The upgrading of this borehole H12-2746 was approved and equipping completed through installing a SVM 70/30 pump and 2.2Kw Franklin motor to supply water at a160m duty point.
- Although the upgrading and the booster pump was not yet approved; the equipping at borehole H02-3792 was in progress but not completed. We await approval from the community to continue with the equipping of H02-3792 and the booster pump installation.

PENGE

ITEM NO	PROJECT NAME	WATER DEMAND PER DAY	BH NUMBER	LONG	LAT	PHOTO	RESULT	AVAILABLE VOLUME (l/d)	FINAL GROUNDWATER ABSTURCTION
43	Penge	100320							
			H12-2612 (H12-BH5)	30.29847	-24.36405		19.66l/s pump suction (Class-1)	302400	3.5 l/s for 24 hours (302.4Kl/day) pump cycle
			H12=2599 (H12-BH2)	30.29778	-24.36448		8.33l/s pump suction (Class-2)	151200	1.75l/s for a 24 hour (151.2Kl/day) pump cycle

- Although two good yielding boreholes are in use at this community no boreholes were equipped or upgraded.
- SDM requested assistance regarding the reticulation for various portions of the community that did not receive water.
- The reasons for the problems were investigated and various leaks, disconnected pipelines etc, were found and the connections re-instated.
- After water is now connected to all household previously without water but many taps / illegal connections caused further leaks and these were also approved and fixed.
- The water reticulations to all households are currently connected and leaks repaired with no outstanding actions at this village.