



## **water & sanitation**

Department:  
Water and Sanitation  
REPUBLIC OF SOUTH AFRICA

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### **MINISTER OF WATER AND SANITATION**

#### **VISIT TO THE CENTRAL BASIN ACID MINE DRAINAGE (AMD) TREATMENT PLANT IN GERMISTON AND MEDIA BRIEFING ON THE WITWATERSRAND AMD LONG-TERM SOLUTION ON 18 MAY 2016**

##### **BACKGROUND**

- Having inherited more than a century's impact of AMD due to prolific mining in the Witwatersrand gold fields, the past five years bears testimony to Government's intensive efforts in making notable strides to mitigate AMD and in doing so, ensuring the protection of our limited water resources.
- Our Government has duly recognised risks presented by AMD in the Witwatersrand, and flowing from industrious efforts under the ordinance of an Inter-Ministerial Committee on AMD, Cabinet sanctioned my Department to intervene and avert AMD-induced crises which could have potentially impacted our water resources, and the natural and built environment.
- Additional to such risks, if allowed to transpire full-scale and without my Department's timeous mitigation intervention, the impact of AMD would have spelt adverse implications for Gauteng's general socio-economic standing.

##### **SHORT-TERM INTERVENTIONS TO MITIGATE AMD**

- In April 2011, I directed the Trans-Caledon Tunnel Authority (TCTA) to effect specific remedies as an "emergency works" project for AMD mitigation in the Witwatersrand.
- This initial project, which has come to fruition, was an interim remedy until a permanent and sustainable solution could be conceptualised, researched and developed.
- In this regard, a detailed study over the course of 2012 and 2013 considered the emergency works and recommended convergence of that project into a long-term solution capable of reclaiming AMD and treating it to standards fit for beneficial socio-economic uses.
- Excellent progress has been made to date on the implementation of the short-term intervention across the three basins within the Witwatersrand area:

## **1. Western Basin – Krugersdorp Area**

- The existing Rand Uranium was successfully upgraded to increase the treatment capacity sufficiently to stop uncontrolled decant of AMD since August 2012, thereby improving the water quality in the Tweelopiespruit.
- Further upgrades to the plant are being implemented to further increase the treatment capacity to 50 mega litres per day.
- Part of the further upgrade already completed was the construction of a new pump station to increase the pumping capacity to the Environmental Critical Level (ECL). The works are being executed in partnership with Sibanye Gold who have since acquired Rand Uranium.

## **2. Central Basin – Germiston Area**

- A new High Density Sludge water treatment plant was successfully constructed in the Central Basin. The plant has been in operation since December 2014 and is currently treating 82 mega litres per day, sufficient to draw down the water level to protect the underground water resources and maintain the Environmental Control Level.
- The works have been executed in partnership with CRG mining company who also donated pumps to the value of R30 million towards the project. CRG has an interest in underground mining which in turn is dependent on the drawdown of the basin.
- TCTA also entered into partnership agreements with DRD Gold to co-dispose the AMD sludge on their tailings dam and to use, free-of-charge, DRD property for the construction of the water treatment plant.
- TCTA is currently in the process of appointing an operator on a short-term contract to undertake the operation and maintenance of the plant. Approximately 50% of the works will be performed by a Black-owned company to create Broad-based capacity within the sector.

## **3. Eastern Basin – Springs Area**

- Construction of a new High Density Sludge plant in the Eastern Basin is nearing completion and the commissioning of the plant has commenced.
- The Eastern Basin plant, of approximately 110 mega litres per day, is the largest of the three plants and one of the largest of its kind in the world.

- In the procurement of an operator for the plant, similarly to the Central Basin, TCTA will further pursue the objective of building broad-based capacity in the sector.

### **Benefits of our initial intervention**

I am proud to say that our interventions in dealing with AMD have yielded a number of direct benefits to the people of South Africa, as follows:

1. **Prevention of an environmental catastrophe:** If we had not intervened the way we did, the flow of AMD into the larger environment, including the natural river system, would have caused widespread environmental pollution through the release of various hazardous metals. Put simply, our concerted efforts have prevented the uncontrolled decant of toxic AMD into the natural environment.
2. **Protection of underground water resources:** Through our ongoing programme of pumping and treating AMD, we have managed to protect valuable groundwater resources from being contaminated by toxic AMD. Over the years, we have succeeded in preventing the rise of AMD above the determined Environmental Critical Level.
3. **Contributions to socio-economic development:** Side-by-side with the critical environmental safeguards that we have achieved, our AMD interventions have also brought about important gains in the socio-economic development of the communities around the Western, Central and Eastern Basins. These project areas have witnessed significant small enterprise development, preferential procurement and skills development among historical disadvantaged groups, as well as job creation, reaching about 1000 jobs at the peak of construction of the treatment plants.
4. **Building State capacity to deal with AMD:** In directing one of our state-owned entities, TCTA, to implement this initial phase of the AMD programme in the Witwatersrand, Government has made a positive move in establishing the requisite knowledge node and capacity to deal with similar legacy issues related to AMD across the country.

### **CONVERGENCE TO THE LONG-TERM SOLUTION**

- We have now decided to move beyond that initial phase, into undertaking a long-term and permanent solution to the AMD challenge: A solution that promises simultaneously to augment the water supply to the nation's economic hub of Gauteng region.
- As I speak now, the Short-Term Intervention has been successfully completed and will now be seamlessly integrated into a sustainable Long-Term Solution.
- This planned intervention will, therefore, turn the AMD problem into a long-term sustainable solution, by producing fully treated water that will significantly increase water supply to the Vaal River System and defer the need for further costly augmentation beyond Phase 2 of the Lesotho Highlands Water Project, for at least another 30 years.
- The pinnacle of this approach is that a polluted resource once considered with contempt, now becomes a commodity contributing to securitisation of the availability of water resources in the Vaal River System, a key driver for continued sustenance and promotion of socio-economic development.

- This initiative on increased water supply will further provide an opportunity for water allocation reform towards more equitable water use amongst sectors.
- This approach of water re-use entrenches the principles enshrined in our sector policies and strategies. And this becomes even more pertinent considering the challenge of climatic change, which has triggered drought conditions across most of South Africa.
- I have consciously considered the success of our interventions to-date and I am pleased to extend the TCTA's scope of work by directing it to implement the long-term solution.
- With the TCTA's experience in the AMD emergency works project, I am confident that the TCTA has the capacity to successfully execute the long-term solution.
- TCTA will accelerate the implementation of this project, with the following key milestones:
  - ✓ Ministerial Directive in May 2016,
  - ✓ Environmental Impact Assessment completed by June 2017
  - ✓ Start Construction January 2018
  - ✓ Commissioning November 2019
  - ✓ Start Operations February 2020
- I wish the TCTA well in implementing this strategic assignment that targets a national imperative.

## **PROJECT FUNDING**

- The combined cost of the emergency works and long-term solution projects is currently estimated to range between R10-12 billion. This is indeed a significant investment and it is important to ensure fairness in the allocation of the costs.
- To this end, the funding model is based on equitable allocation to us government, the mining sector and water users.
- The mining sector is the contributor to AMD and should carry some share in the costs, without unnecessary overburdening the sector and threatening jobs.
- In recognising the benefits to the country from mining, government has decided that the fiscus should shoulder some of the costs.
- While we recognise that water users bear the burden of the environmental impacts and degradation of the water resources, we also note that this initiative to turn the problem into an opportunity defers future augmentation and benefits water users.
- It is fair therefore that some of the costs be included in water use charges, without placing the water users in a worse-off financial position than they would be if nothing was done.
- With the support of National Treasury, we have decided to cap the contributions of the water users to the cost of dealing with the problem to only 33% of the project

cost. The intention of Government is to recover the balance of 67% from the mines through the proposed environmental levy.

- In the interim however, prior to the implementation of the policy and associated consultations, government will cover the anticipated recoveries from the mining sector.

## **WAY FORWARD AND CONCLUDING REMARKS**

- Going forward, my Department will augment its role as the custodian of water through the formalisation of a Policy Position Paper on Mine Water and AMD Management. This Policy, which sets out nine principles that strive to strengthen the protection of water resources, will be gazetted for public comment in due course.
- Parallel measures with my Department's research arm, the Water Research Commission to explore new and emerging technologies are underway to maximise our efforts in managing AMD, particularly from the Strategic Water Partnership Network and mining industry are also underway.
- While my Department is making dedicated efforts to manage AMD proactively, other mining areas where AMD impacts may manifest are being monitored. Government appreciates that mining is a cornerstone of our economy and promotes its development, but the role of the mining sector in ensuring optimised water resources management will not be allowed to fall behind.
- My Department has convincingly demonstrated the inroads it has made to deal with AMD: Our efforts to date are a testimony to our commitment to deal decisively with the challenge.