



the federation for a sustainable environment

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**SUBMISSION TO THE PARLIAMENTARY PORTFOLIO COMMITTEE ON
 ENVIRONMENT AND WATER**

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EXECUTIVE SUMMARY

Decision making in the environmental area is required to take into account the requirements of various pieces of legislation. The foundation legislation is the Constitution (as amended) which provides at S 24 that:

[e]veryone has the right-

(a) to an environment that is not harmful to their health or well-being; and

(b) to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that-

- (i) prevent pollution and ecological degradation;
- (ii) promote conservation; and
- (iii) secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development

The public has a role to play in decisions that affect their life circumstances and in the matter under consideration, end water users that carry the impacts and costs of Acid Mine Drainage (AMD).

Decisions regarding the pumping and treatment of AMD have been taken unilaterally without any public involvement or participation. The urgency of the situation cannot be argued in defense since AMD started to decant since 2002 from the West Rand Basin, with devastating consequences.

In view of the beleaguered status and recent takeover of the mining companies operational within the East Rand-, Central Rand and West Rand goldfields, **there is an urgent need for an extensive audit** on the said mining companies **pertaining to their financial provisions and their environmental liabilities**, including residual or latent impacts in terms of the Mineral and Petroleum Resources Development Act (28 of 2002)

Anomalous to the Department of Water Affairs' media statement on the 12th of June, 2011, entitled "*Update of Mine Water and Acid Mine Drainage Management in the Witwatersrand Area*" that "*the highest priority is being given to the development of solutions to reduce, if not eradicate the surface decant of acid mine drainage in the West Rand area*", and firmly grounded upon physical or real evidence, **there is no evidence of the installation or refurbishing or upgrading of water treatment plants or infrastructure within the West Rand Basin.**

Neutralisation was recommended by the Task Team Report to the Interministerial Committee on AMD as the preferred treatment option for the AMD in the short term (4

years). **The impacts of neutralisation**, that is the high sulphate loads upon the receiving environment and the large volumes of heavy metal sludge residue, **will be unacceptably high**. The costs and impacts will be unfairly and inequitably borne by agricultural users, surrounding industries, domestic or potable users and the aquatic ecosystem and environment¹. **The aforesaid is conceived as the single biggest flaw in the predictions report. The Report does not state what the impact will be on the environment of this high sulphate laden water, yet recommends it for release, but somehow invokes the precautionary principle.**

In the Report's discussion on neutralisation the emphasis is on non-internalised costs. The externalised costs of the highly saline water that will be discharged are not accounted for.

The Report does not account for the opportunity costs associated with the release of clean water into the Vaal River System to dilute the neutralised high salinity product. This water is lost for future development.

Furthermore, the criteria proposed for the desalination will be unattainable.

PUBLIC PARTICIPATION

In terms of Section 4 of the National Environmental Management Act (107 of 1998):

(f)The participation of all interested and affected parties in environmental governance must be promoted, and all people must have the opportunity to develop the understanding, skills and capacity necessary for achieving equitable and effected participation, and participation by vulnerable and disadvantaged persons must be ensured.

(g)Decisions must take into account the interests, needs and values of all interested and affected parties, and this includes recognising all forms of knowledge, including traditional and ordinary knowledge.

¹ The National Water Act (36 of 1998) puts high priority on the protection of this water users.

The consultative process, it is our respectful opinion, has, *inter alia*, the following characteristics:

1. The essence of consultation is a communication of ideas on a reciprocal basis;
2. The consultative procedure must allow reasonable opportunity to both sides to communicate effectively;
3. Consultation must be seen as more than a mere opportunity that you give to me, as an interested and affected party, to make ineffective representations;
4. The right to be consulted is valuable and should be implemented:
 - 4.1 by giving interested and affected parties an opportunity to be heard, and
 - 4.2 must take place at the formative stage of the application process and before the DWA and/or the decision makers' mind become unduly fixed.
5. Sufficient information must be provided to interested and affected parties in order to enable IAPs to tender helpful advice.
6. Sufficient time must be given to IAPs to enable IAPs to give the advice and sufficient time must be available to the decision makers to consider the advice tendered.

In our sustained endeavours to be involved in the public participation process, we were furnished with anomalous responses by the Department of Water Affairs and the Trans Caledon Tunnel Authority, which frustrated our endeavours.

Please see subjoined box in substantiation of our allegation.

Good Day All

Upon enquiry about the public participation process and details of the above matter on 11 May 2011, we were told by Mr. Govender of DWA the following by email :

Dear Naseema

Any request for information relating to items 3.1, 3.2 and 3.3 in email below, or related matters, must be directed to Mr Johann Claassens of the Trans Caledon Tunnel Authority (TCTA),. The PA to Mr Claassens is Ms Clansina Mvelase and she can be contacted on 012 683 1235.

Regards

Bashan Govender
 Department of Water Affairs: Gauteng Regional Office
 Private Bag X995
 Pretoria
 0001

We therefore contacted TCTA for clarity and received the correspondence below.

Kindly advise as a matter of urgency who we are to engage on this matter and whether a public participation process will be conducted, who is to conduct it and the time frames for the project.

We trust our request will be given due consideration and we will not be shunted from pillar to post in order to gain information that is in our opinion not time-consuming or difficult to provide.

Regards
Naseema

From: Thandi Mapukata [<mailto:TMapukata@tcta.co.za>]
Sent: Wednesday, June 01, 2011 6:13 PM
To: Mateenah Hunter
Cc: Naseema Fakir; Koos Pretorius; mariette@pea.org.za
Subject: RE: AMD WEST RAND

Dear Mateenah

Due to the fact that TCTA is an implementing agent carrying out a government mandate, any statement announcing our appointment must be issued by the Dept of Water Affairs. I will still copy you as soon as that statement has been released. Likewise, any public participation processes will be driven by the Department. I would really suggest that you contact them for details on these programmes.

Regards,

Thandi Mapukata
[Head: Communications]

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FINANCIAL AUDIT IN VIEW OF TAKE-OVERS AND BELEAGUERED MINING
COMPANIES

The mining companies operational within the West Rand Goldfield are DRD Gold, Rand Uranium and Mintails. The mining company operational within the Central Rand Goldfield is Central Rand Gold. The mining company that was, until recently, operational within the East Rand Goldfields, was Aurora Investment Holdings.

Of grave concern is the takeover by Gold One of Rand Uranium and its significant AMD liabilities, and the subsequent announcement by the CEO of Gold One, Mr. Neal Froneman of: *“the takeover whereby the consortium, led by China’s Baiyin Nonferrous Group, would acquire at least 60% of Gold One ...”*

The beleaguered Central Rand Gold has recently been named in a R1-billion fraud charge over a mining deal. Central Rand Gold will undoubtedly be involved in the installation of new pumps for the pumping and treatment of AMD from the flooding Central Basin and for the discharge of the neutralized water to nearby water courses. The recommendations of the Caledon Trans Tunnel Authority’s Tender document must be operational by 28 February, 2012, that is, within 9 months. In view of the allegations against Central Rand Gold, we express serious concern regarding the financial capacity and moral corporate character of Central Rand Gold to fulfill the afore-mentioned functions and call for a co-operative governance audit and performance review on Central Rand Gold in terms of its Environmental Management Programme Report (EMPR), nuclear licence conditions, water use license and closure plan, including an audit on the funding provisions for closure and post closure care and maintenance.

There is a need for an extensive audit on the financial provisions and the environmental liabilities, including residual or latent impacts in terms of the Mineral and Petroleum Resources Development Act (28 of 2002)² on all the mining companies operations within the

² MPRDA requirements

“financial provision” means the insurance, bank guarantee, trust fund or cash that applicants for or holders of a right or permit must provide in terms of sections 41 and 89 guaranteeing the availability of sufficient funds to undertake the agreed work programmes and to rehabilitate the prospecting, mining, reconnaissance, exploration or production areas, as the case may be;

41 (3) The holder of a prospecting right, mining right or mining permit must annually assess his or her environmental liability and increase his or her financial provision to the satisfaction of the Minister

Witwatersrand Goldfields, that is, the East Rand-, West Rand-, Far West Rand-, Central Rand-, KOSH- and Free State Goldfields. It is recommended that this be done as a matter of urgency.

CURRENT STATUS PERTAINING TO ACID MINE DRAINAGE WITHIN THE WEST RAND BASIN

The following recommendations were approved by the Interministerial Committee and Cabinet for immediate implementation:

1. Installation of pumps to extract water from the mines to on-site treatment plants
2. Construction of an on-site treatment plant in each basin with the option of refurbishing and upgrading the existing ones owned by the mines
3. Installation of infrastructure to convey treated water to nearby water courses

In terms of the Trans Caledon Tunnel Authority's (TCTC) Request for Proposal for the Appointment of Professional Service Provider (Consulting Services Acid Mine Drainage Phase 1) the abovementioned pumps and infrastructure must be operational by 28 February, 2012.

The current status of the AMD within the flooded West Rand mining basin, grounded upon physical or real evidence, is as unhappily very different to the envisioned status. The current status is as follows:

41(4) If the Minister is not satisfied with the assessment and financial provision contemplated in this section, the Minister may appoint an independent assessor to conduct the assessment and determine the financial provision

89. *In addition to section 5(4), no exploration operation or production operation may commence unless the holder of the rights concerned has provided for a financial provision acceptable to the designated agency guaranteeing the availability of sufficient funds for the due fulfilment of all exploration and production work programmes by the holder.*

- There is no physical evidence of that pumps are installed or that existing treatment plants are refurbished or upgraded, or that infrastructure is being installed to convey treated water to nearby water courses.
- Between 18 and 36 million litres per day of AMD are flowing, uncontrolled and untreated into the Tweelopiespruit (Limpopo Catchment) and seep into the Wonderfonteinspruit (Vaal River Catchment). During heavy rainfall 60 million liters per day of AMD flow into the receiving environment.

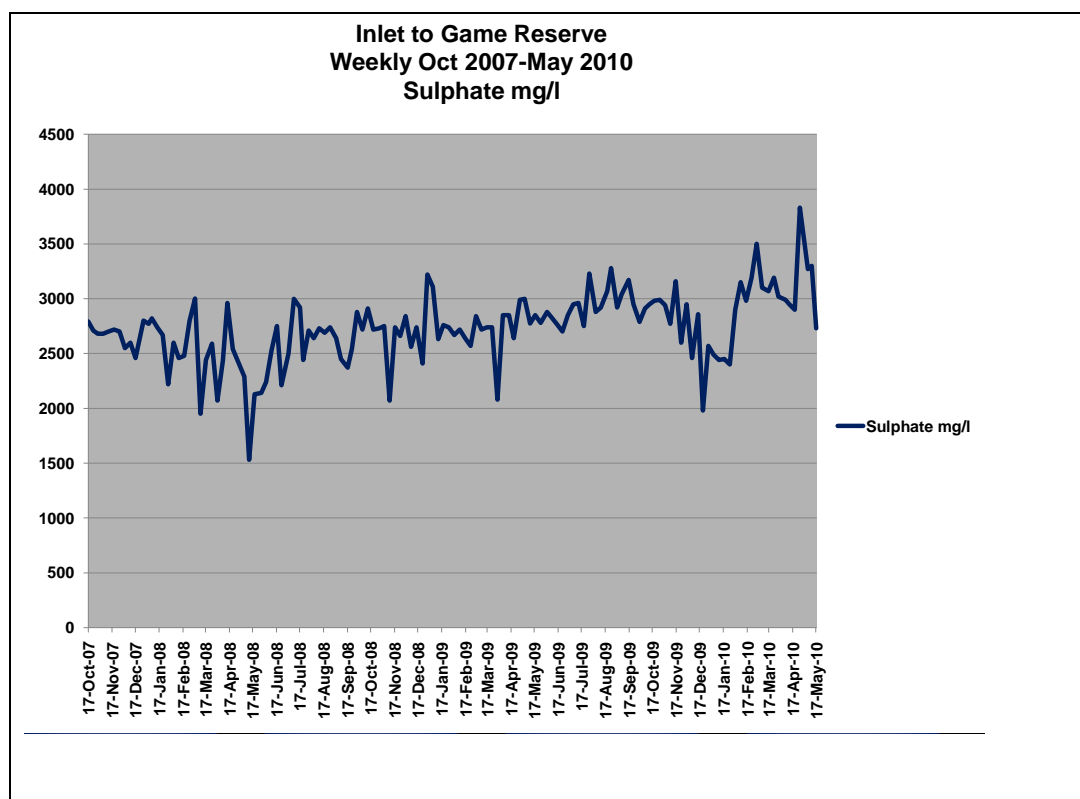


Plate 1 Untreated and uncontrolled outflow of AMD from the property of Rand Uranium into the Krugersdorp Game Reserve and Tweelopiespruit.

Results indicate that **U-levels** in water resources of the whole catchment **increased markedly** since 1997 even though U-loads emitted by some large gold mines in the Far West Rand were reduced. This apparent contradiction is **explained by the contribution of highly polluted water decanting from the flooded mine void in the West Rand. 800kg** of U per year flowing into Boskop Dam as Potchefstroom's main water reservoir. Of particular concern is the fact that U-levels in the WFS are comparable to those detected in the Northern Cape which had been geostatistically linked to abnormal haematological values related to increased incidences of **leukaemia** observed in residents of the area. (Reference: *Uranium Pollution of*

Water resources in Mined-Out and Active Goldfields of South Africa – A Case Study in the Wonderfonteinspruit Catchment on Extent and Sources of U- Contamination and Associated Health Risks. Prof.Dr. Frank Winde. 2009.)

- Rand Uranium is partially treating 12.5 million litres of AMD per day by means of neutralisation and discharging it into the Tweelopiespruit. The water is toxic and unfit for any use. See box.



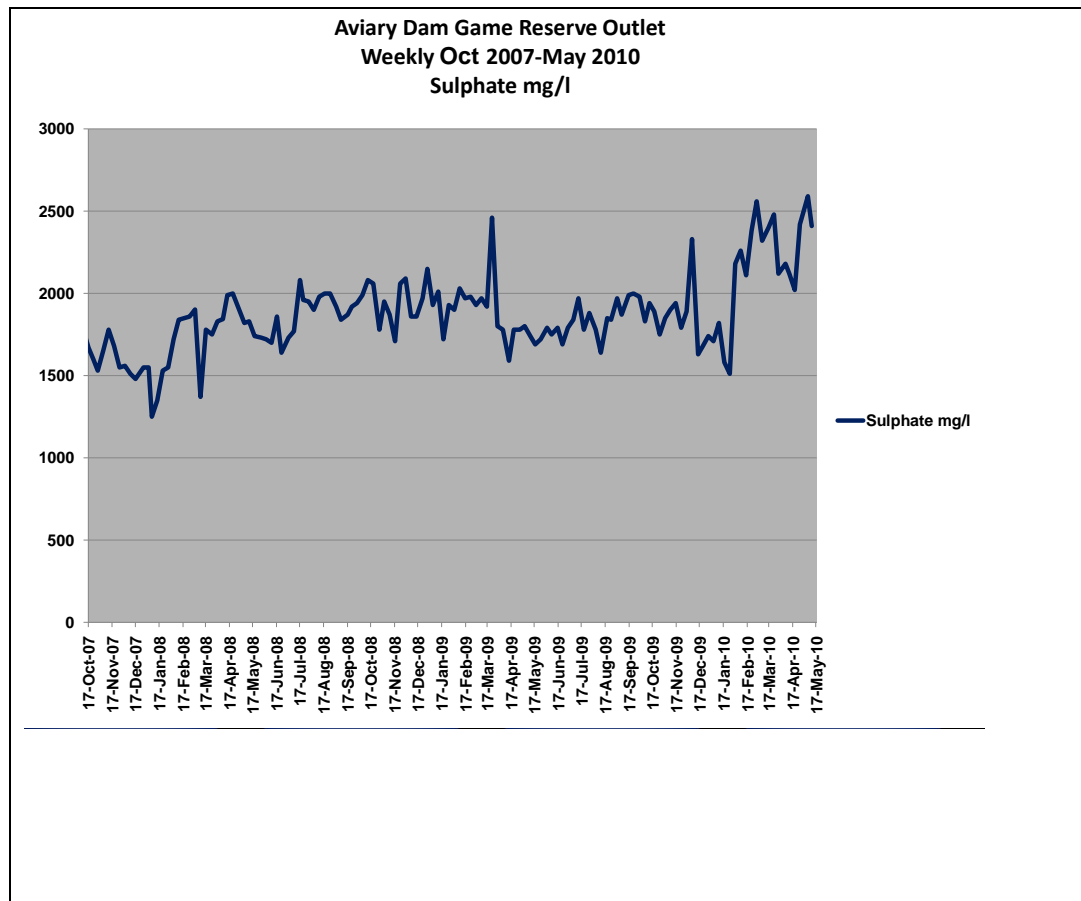


Plate 2

- There are significant volumes of water decanting from different point sources within the Randfontein area. On some samples, the sulphate concentrations are high when compared to typical values for fresh water, which would be an appropriate benchmark as we are concerned with the source of the water. The concern has been expressed by Dr. Henk Coetzee of the Council of GeoScience that the obvious local source of sulphate would be related to mining, underlining the need to trace the source of the water and to monitor the situation³.
- Fish kills have been reported within the Cradle of Humankind World Heritage Site. A combination of causative factors including the presence of a significant (albeit

³ E-mail correspondence from Dr. Henk Coetzee, dated Wednesday, May 11, 2011, 6:15PM to Maluleke Justice; Llewellyn Oliver; Van Wyk Eddy, Peter Mathebula; Evert du Plessis; Nokwazi Ndlala; Elise Tempelhoff; Tlaila Moleseng; Susan Stoffberg; Maliba Ramatlhale; Sheree Bega; Koos Pretorius; Les Stoch; Garfield Krige; Keet Marius (PTA); Sarel Keller; Govender Bashan (GAU); grotman@grotman.co.za; Mariette Liefferink; Danel Van Tonder; Fortress Netili; Corneli Hogan

diluted) **ferric iron-bearing mine water component** in the oxygenated surface discharge, contributed to reducing dissolved oxygen concentrations in the Koelenhof Farm dam water to sub-lethal and lethal levels for the resident karp population.



Plate 3 Discharge in the Riet Spruit at its intersection with the Malmani Road (station MRd1) on 12/01/2011; note the red colouration of the water indicative of a strong acid mine water character. (Photo: Phil Hobbs).

(Reference: Hobbs, P.J. and Mills, P.J. (2011). *The Koelenhof Farm fish mortality event of mid-January 2011*. Report prepared for the Management Authority. Department of Economic Development. Gauteng Province. South Africa. 19 pp.)

A CONCISE RESPONSE TO THE FINDINGS AND RECOMMENDATIONS OF THE
REPORT TO THE INTER-MINISTERIAL COMMITTEE ON ACID MINE
DRAINAGE (DECEMBER 2010)

1. The Report to the Inter-Ministerial Committee on Acid Mine Drainage (“the Report”) is well written and professionally sound. It furthermore acknowledges its own weaknesses, the most important being the absence of monitoring data required to prioritise or implement its recommendations⁴.
2. It should be noted that the AMD problem has reached its current level of crisis largely because of the compartmentalised and stratified nature of government executive administration. This fact is overlooked in the Report⁵.
3. The FSE takes ownership of what it had said in the past. The FSE feels completely vindicated by the findings of the Report of the impacts if there is no intervention. These impacts had been predicted by the FSE.
4. The basic failure of the Report is its non adherence to the polluter pays principle⁶ and its failure to take into account the externalised costs of the neutralization, which is the preferred option, when comparing different treatment options.
5. The above-mentioned failure of the Report will necessitates intervention on the part of the FSE in order to rectify a situation which is conceived as being unconstitutional⁷. This is a direct consequence of the Inter-ministerial Committee

⁴ Personal Communication: Dr. Mike Witcutt. Highveld Biological.

⁵ Ibid.

⁶ *“The costs of remedying pollution, environmental degradation and consequent adverse health effects and of preventing, controlling or minimizing further pollution; environmental damage or adverse health effects must be paid for by those responsible for harming the environment.”* (Section 4 (p) of the National Environmental Management Act, No 107 of 1998.)

“Every person who causes, has caused or may cause significant pollution or degradation of the environment must take reasonable measures to prevent such pollution or degradation from occurring, continuing or recurring, or in so far as such harm to the environment is authorized by law or cannot reasonably be avoided or stopped, to minimize and rectify such pollution or degradation of the environment.” (Section 28 of the NEMA.)

⁷ The Bill of Rights in the Constitution of the Republic of South Africa (Act 108 of 1996) enshrines the concept of sustainability, specifying rights regarding the environment, water, access to information and just administrative action. These rights and other requirements are further legislated through the National Water Act (NWA) (Act 36 of 1998). The latter is the primary statute providing the legal basis for water

refusal to consult with stakeholders for their input⁸ – another unconstitutional activity.

6. There is a need for an extensive audit on the mining companies' performance in terms of their Environmental Management Programme Reports (EMPR), Integrated Water Use Licences (IWUL) and closure plans. It is recommended that this be done as a matter of urgency.
7. The two main recommendations that are made in the Report to address Acid Mine Drainage are:
 - a. ingress control; and
 - b. pumping and treatment of the pumped water.
8. It is evident from the Report that the Department of Water Affairs (DWA), Department of Environmental Affairs (DEA) and Department of Mineral Resources (DMR), respectively, have failed to:
 - maintain the quality of the water resource to the extent that the water resource may be used in an ecologically sustainable way
 - prevent the degradation of the water resource;
 - rehabilitate the water resource;
 - avoid the disturbance of ecosystems and loss of biological diversity or where they cannot be altogether avoided, are minimised and remedied;

management in South Africa and has to ensure ecological integrity, economic growth and social equity when managing and using water. Use of water for mining and related activities is also regulated through regulations that were updated after the promulgation of the NWA (Government Notice No. GN704 dated 4 June 1999).

⁸ *“The participation of all interested and affected parties in environmental governance must be promoted, and all people must have the opportunity to develop the understanding, skills and capacity necessary for achieving equitable and effective participation, and participation by vulnerable and disadvantaged persons must be ensured.”*

“Decisions must take into account the interests, needs and values of all interested and affected parties, and this includes recognising all forms of knowledge, including traditional and ordinary knowledge.” (Section 4 (f) and (g) of the NEMA.)

- prevent and anticipate the negative impacts on the environment and on people's environmental rights, and where they cannot be altogether prevented, are minimised and remedied;
 - ensure that mining will not result in unacceptable pollution, ecological degradation or damage to the environment;
 - ensure that environmental impacts are managed in accordance with the approved environmental management programme.
9. History has proved that the mining industry is not capable of any form of self regulation and governance hence a much more aggressive audit and inspection regime is called for.
10. It is evident from the Report that the impacts are unacceptably high for the receiving environment. The mining industry has not been willing to mitigate these impacts. It would appear that temporary solutions have the very bad habit of becoming permanent solutions, especially in view of the fact that no timeframes have been established for the alternatives to be implemented. Furthermore, the criteria proposed for the desalination will be unattainable.
11. The unmitigated environmental disaster within the Western Basin, which is unacceptable to end water users and civil society, is now being hailed as the accepted status quo of what can be allowed. The mining industry predicted the significant environmental impacts of the decant of the flooded mining basin in 1996 and in 2006⁹. Crisis management followed from 2002, when the decant occurred, to today.

⁹ Environmental Impact Document. *“Impact of the discharge of Treated Mine Water, via the Tweelopies Spruit, on the receiving body Crocodile River System, Mogale City, Gauteng Province”*. DWAF 16/2/7/C221/C/24. 3 December, 2006.

*“An integrated strategic water management plan (Swamp) for the Gauteng Gold Mine”*s. Johan Fourie and Associates. 1996. It was concluded: *“The implementation of the project should start without delay. Failure to implement this project would result in the rise of the water table in some mining basins with a reverse pollution effect taking place to some of the dolomite compartments – with devastating consequences.”*

These concerns find support in the recognition, recorded in Section 102 of the Harmony Gold EIA Document¹⁰ and the CSIR Report No. CSIR/NRE/WR/ER/2007/0097/C, entitled “*A Hydrogeological Assessment of Acid Mine Drainage Impacts in the West Rand Basin, Gauteng Province*” (August, 2007) that “*an unqualified volume still escapes downstream into the Zwartkrans compartment via the Tweelopiespruit, mostly subsurface.*” There are 2654 Ha under irrigation using borehole water in the Zwartkrans Compartment and 458 Ha under irrigation using river water. There are 11 491 people living on dolomite using 250 l/person/day groundwater¹¹. The highest cost burden of combating salinity if desalination is not implemented will be carried by the said end water users, and not by the mining industry as might be expected.

12. Despite the impacts on the environment of untreated water, the State is allowing and has allowed the mines to discharge and decant toxic water in both the East and Western basins respectively for prolonged periods. The National Water Act (NWA) provides for the State to act and recover the costs¹². It begs the questions why it is not done and whether it will be done.

¹⁰ Ibid

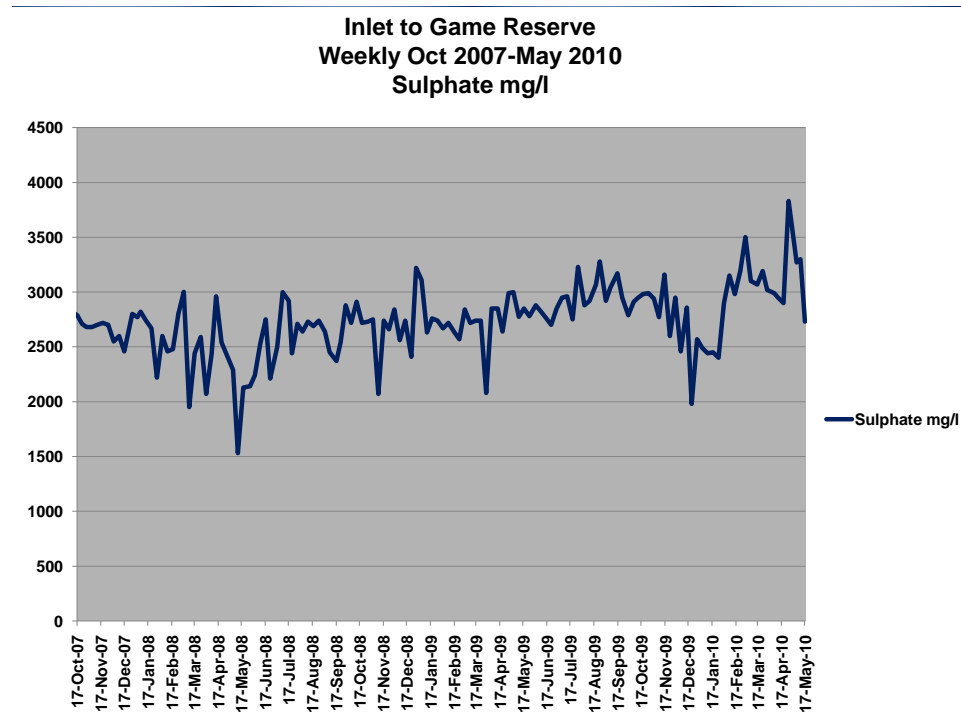
¹¹ Ibid

¹² “A catchment management agency may direct any person who fails to take the measures required under subsection (1) to- commence taking specific measures before a given date; diligently continue with those measures, and complete them before a given date.

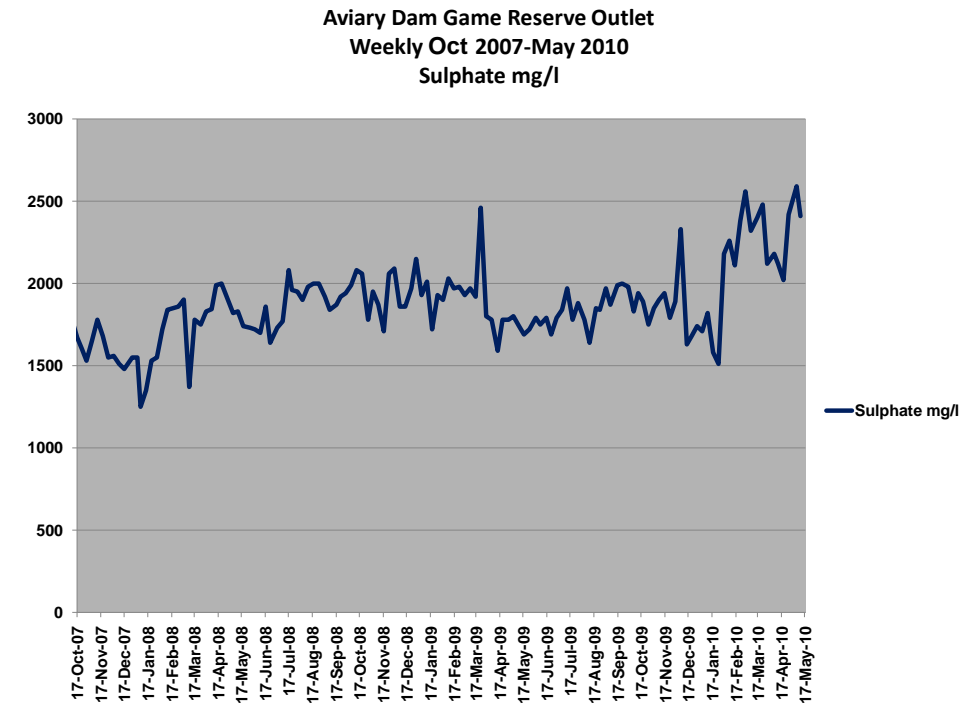
(4) Should a person fail to comply or comply inadequately with a directive given under subsection (3) the catchment management agency may take the measures if considers necessary to remedy the situation.

(5) Subject to subsection (6), a catchment management agency may recover all costs incurred as a result of it acting under subsection (4) jointly and severally from the any person who is or was responsible for, or who directly or indirectly contributed to the pollution or the potential pollution; the owner of the land at the time when the pollution or potential pollution occurred, or that owner’s successor-in title, etc.” (Section 19 (3); (4); (5) of the NWA.)

13. It must be noted that that neutralisation results in the removal of some degree of sulphates. In the flooded West Rand, neutralization of AMD results in the discharges of water of between 1 500 and 3 700 mg/l sulphates¹³.



¹³ The World Health Organisation' standard for sulphates is 200mg/l; the environment requires < 100 mg/l and animals can tolerate up to 1000 mg/l. Irrigation requirements are < 150 mg/l, that is, for **total** salts.)



It should be noted that 25 million litres of neutralised AMD deposits 100 tons of salt into the receiving environment every day, that is, 5 20 ton trucks of salt.

Volumes and loads 2005 - Jan. 2010

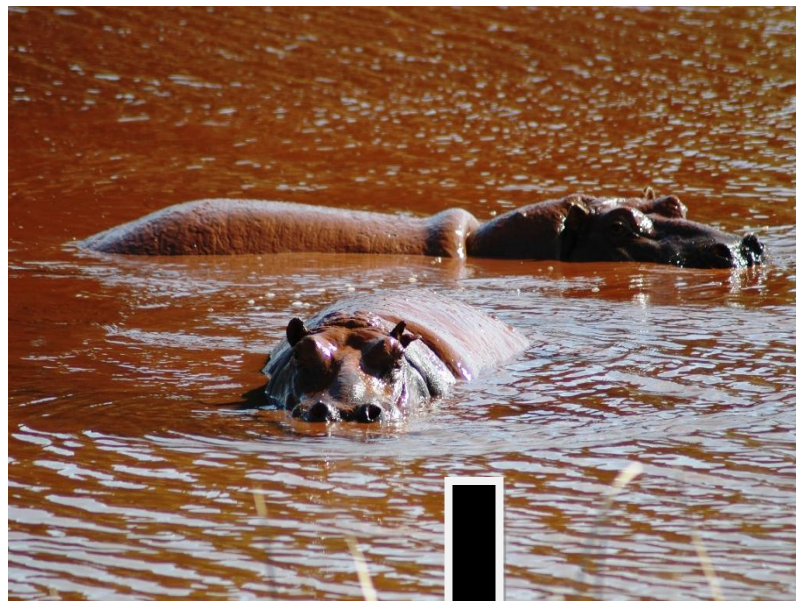
- Polluted water is discharged into a receiving environment
 - Volume = ~25Ml/d
 - Salt content = ~4g/l
 - Salt load = ~100 tons per da



Photo: Courtesy Dr. Henk Coetzee

14. On the 18th of March, 2010, the former Minister of Water Affairs, Minister Sonjica Buyelwa (2009 – 2010) donated R6.9 million for the purchase of lime to ostensibly ameliorate the impacts of the uncontrolled, untreated AMD from the West Rand Basin. Lime was added to the uncontrolled untreated AMD that flowed from the Rand Uranium property into the receiving Krugersdorp Game Reserve. As a result of the neutralisation of the AMD with lime, the toxic and radioactive heavy metals precipitated in the receptor dams (Hippo Dam and Aviary Dam) and the Tweelopiespruit within the Krugersdorp Game Reserve. The heavy metal sludge has coated the two resident hippopotami. The neutralisation caused the formation of a heavy metal crust on the bottom of the Tweelopiespruit. The Tweelopiespruit is sterile and all aquatic biota has been wiped out. Please see the photographic evidence subjoined hereunder.







15. **The aforesaid is conceived as the single biggest flaw in the predictions report. The Report does not state what the impact will be on the environment of this high sulphate laden water, yet recommends it for release, but somehow invokes the precautionary principle.**

The additional salinity as a result of Acid Mine Drainage (AMD) creates water security risks. In order to comply with the regulatory limit of 600 mg/l sulphates, good quality water has to be released from the Vaal Dam in order to ensure that the water below the Vaal Barrage is fit for use, that is, by means of dilution. The projected demand for increased releases from the Vaal Dam of expensive Lesotho water will increase the stress upon the water supply. Water supply shortages will be experienced by 2014.

The additional volume of water that has to be released as a result of the salinity associated with AMD will result in a considerable reduction of water supply to the Upper Vaal so much so that the total capacity of Phase 2 of the Lesotho Highlands scheme will be cancelled. It necessitates that the Tugela supplementary scheme will have to be advanced. It will have significant cost implications. It will

result in the loss of water to the Oranje River system and poorer quality water discharges from the Vaal River to the Oranje River system, with associated costs for downstream water users¹⁴.

In terms of the DWA's Vaal River Water Resource Management Strategies **desalination** of AMD has been identified as the first option to limit the salination of the Vaal River System. It was found that: *"Any further increases in TDS load to the system could impact on the public health and ecological Reserve aspects of the water quality as well as the timing of the next augmentation scheme."* Desalination is **not recommended** in the Report due to the cost.

The dilution of these salts, which will be in the "treated water" after neutralization, is not without cost. **This was, however, not quantified in the financial assessments and only direct cost was compared.**

If these externalized costs were to be taken into account, a different recommendation would have followed.

15. This Report recommends that the taxpayer not only pays for the cost of the treatment and capital associated with the treatment, but the proposed treatment will furthermore compromise socio economic development in order to use expensive water from the Lesotho Highlands Project, paid for by the taxpayer, in order to mitigate the pollution of the mining industry. The "polluter pays

¹⁴"Integrated Vaal River Water Resource Management Studies"
<http://www.dwa.gov.za/Projects/VaalWRMS/>

"Vaal System Large Bulk Water Supply Reconciliation Strategy" – "Executive Summary"
http://www.dwa.gov.za/Projects/VaalWRMS/documents/LargeBulkWater/09_Vaal%20Recon%20Executive%20Summary_Final.pdf

"VaalRiverRe-Use Options"
http://www.dwa.gov.za/Projects/VaalWRMS/documents/LargeBulkWater/03_Reuse%20Options_Final.pdf

"Second Stage Vaal System Large Bulk Water Supply Reconciliation Strategy"
http://www.dwa.gov.za/Projects/VaalWRMS/documents/LargeBulkWater/08_Vaal%20Second%20Stage%20Recon

principle” is based on the internalisation of externalities and therefore is central to the equitable resolution of pollution costs currently being borne by the end user.

16. There is no explanation given regarding the benefits that would have flowed from the desalination of the mine water. The benefits will include:

- No water will be needed for dilution,
- There will be positive impacts on the reserve,
- There will be positive impact on water users,
- There will be lower volumes of water needed by other industries due to lower pollution levels,
- There will be increased socio economic benefits from the additional water, etc.

The benefits should have been taken into account in the assessment of the financial implications.

17. **Neutralisation of mine water and discharge** to the environment will produce **conditions similar to the status quo** during periods of active mining. **In the medium to long term this may not be sustainable as it could result in excessive salt loads on the receiving water bodies, which will require the release of clean water for dilution, particularly in the Vaal River System.**

18. In the Western and Eastern Basins the DWA had intervened to a certain extent, yet these interventions had been a failure. The report does not address the reasons why these failures occurred, nor does it make recommendations as to how the Government should intervene in the future in similar situations. By failing to propose short, medium and long term plans for addressing the flooding and decant of the KOSH and Free State goldfields and the Mpumalanga coalfields, crisis management is supported and not proactive management of environmental impacts.

19. From a comparison between South Africa's management of AMD and the management of other countries of AMD, it is clear that the polluter, or at least the industry is paying in other countries. In Germany, the historic coal companies are still in existence, and they are importing coal for the power stations, and making a profit on the imports in order to pay for the cost of water treatment. That means that we are subsidising the water treatment in Germany, however we are not prepared to pay for the cost of treatment in our own country.
20. The essence of the water treatment options, as argued in the Report, is that if water desalination is not financially sustainable, the mines cannot be expected to pay. Until such time as it pays, the Report justifies pollution and the externalisation of costs.

Issues of concern are:

- a. Will there be similar treatment of other polluters in the country?
- b. The National Desalination Strategy states that the shortfall between the cost of treatment and the price of the water must be paid by the consumer.
- c. With reference to the proposed recovering of the costs of desalination:
The cost of desalination projects will have to be recovered from the water users in accordance with the principles of the National Water Pricing Strategy. A desalination project will typically be one of several schemes to supply water to a region, city or community. **The water tariff must reflect the cost of the total water supply system, including the desalination project(s) and the specific users of the desalinated water must not be charged a differential rate or tariff.** This, however, is inequitable and unfair since the cost of 1m³ of water in eMalahleni is R11 whilst the cost from the Witbank dam is only R2-20 per m³. It will be unconstitutional and contrary to the principles of the NEMA, MPRDA and the NWA for the consumers to carry the costs.

21. In the Report's discussion on neutralisation the emphasis is on non-internalised costs. The externalised costs of the highly saline water that will be discharged are not accounted for. The taxpayer and other water users who did not benefit from the mining operations will carry the costs and/or impacts. This is unpalatable, namely that end water users or the ordinary taxpayers, who have no connection whatsoever to the pollution, and derived no benefit from it, will be compelled to carry the costs.

22. We respond to the Report's discussion on the criteria that need to be factored in prior to the consideration of the desalination process, namely:

- Minimum running cost,
- Minimum capital cost,
- Minimum sludge/brine disposal cost,
- Maximum value of treated water and by-products,

as follows: These pre-determined criteria are such that, by analogous reasoning, it is the same as waiting to buy a Mercedes at the price of a bicycle which requires no fuel and has no maintenance care. This is conceived impossible.

23. The DWAF has developed a series of Best Practice Guidelines (BPGs) for mines in line with International Principles and Approaches towards sustainability. It begs the question why the Best Practise Guidelines for mine closure¹⁵ of the DWA were not implemented in the pro-active management and management of Acid Mine Drainage.

24. There is active mining within the Free State, KOSH, Far West Rand and Evander Gold Fields and water is pumped from these basins. It is recommended that a risk

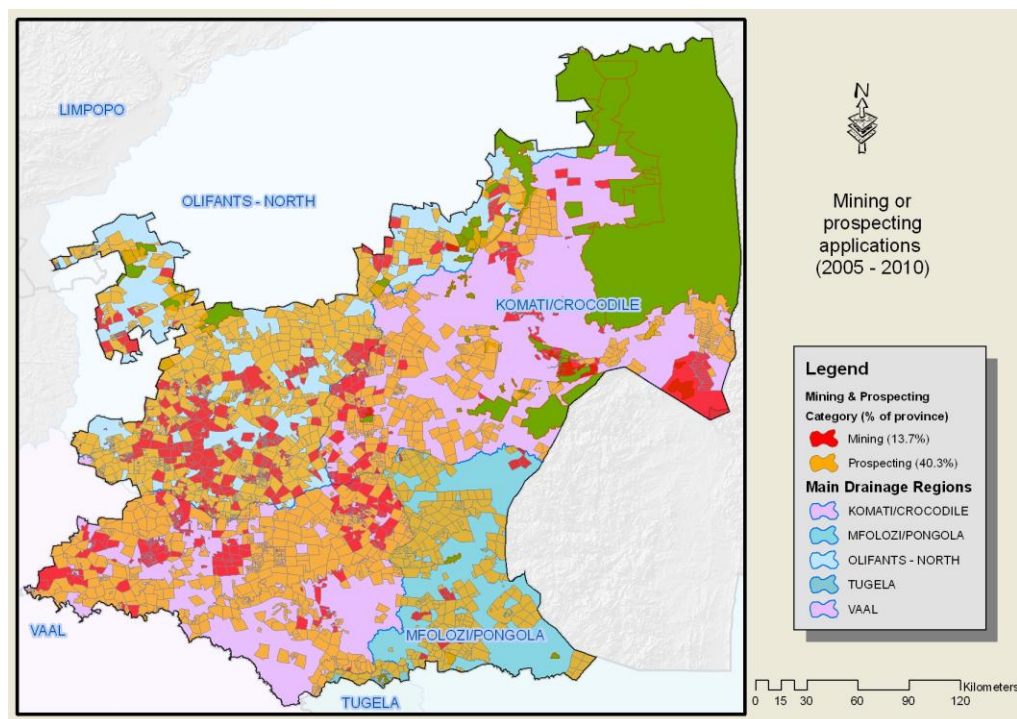
¹⁵ G5. Water Management Aspects for Mine Closure. Best Practice Guidelines for Water Resource Protection in the South African Mining Industry. Directorate: Resource Protection & Waste. Department of Water Affairs and Forestry.

assessment of these areas be carried out to determine their vulnerability to the premature closure of specific mines and shafts.

Urgent financial liability, legal- and EMPR compliance audits need to be undertaken on the aforesaid mines to make provision for their post closure treatment of AMD.

25. The Report recommends a birds-eye-view environmental risk assessment of the entire Witwatersrand gold-mining basin, focussing on the impacts of mining on the environment and the health and safety of communities. A similar study should be conducted for the Mpumalanga Coal Fields

Significant water related problems, including numerous AMD decants have been reported in the Mpumalanga Coal Fields. **These environmental incidents must be regarded as serious. There is need for progressive action and assessment, particularly in view of the expansion of coal mines in the area and of the reported regional-scale impacts.**



26. Taking into account the vast areas under application in the Limpopo province and other provinces for coal mining and other resources, it is imperative that a detailed study of the cumulative impacts (birds-eye-view) is done and that the minimum requirements of financial liability and provision for latent and residual impacts in the planning stages are shown and that this is incorporated into the EMPR.

SUBMITTED BY:

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15 June, 2011.