Integrated Environmental Authorisation Application Process for the Proposed Closure of the Underground Workings of the Ezulwini Operations of Sibanye Gold

Final Comments and Response Report

Version 3

October 2017

This Comments and Response Report (CRR) Version 3 provides a summary of the comments, questions and issues raised by stakeholders since November 2016 when the environmental authorisation process was announced.

- Version 1 of the CRR was appended to the Consultation Basic Assessment Report and recorded issues and concerns raised during the announcement period of the project from 21 November 2016 to March 2017;
- Version 2 of the CRR was appended to the updated Consultation Basic Assessment Report and included comments that were raised on the Consultation Basic Assessment Report which was available for public review from 3 April to 21 May 2017 (as well as comments received after the public review period); and
- Version 3 of the CRR is appended to the Final Basic Assessment Report and includes comments that were raised in the second public review period.

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Comments received during the announcement (November 2016 – March 2017)						
The FSE kindly requests that an assessment of the impact of the proposed closure on the downstream water users, the eco-system, the dilution capacity of the Klein Wes-Rietspruit (dilution of sewage) and the risk of flooding of the South Deep operations be included in the Basic Assessment.	Ms	Mariette Liefferink	CEO: Federation for a Sustainable Environment (FSE)	23/11/2016	Email in response to the announcement	This has been addressed in the specialist reports and the BAR.
We believe there is an omission in the BID regarding the potential impact the Ezulwini Partial Closure has on neighbouring mines, and more specifically, the direct neighbour, South Deep. South Deep still has a 70-year life of mine, and the effects of flooding at Ezulwini are currently not fully understood or quantified. Partial closure of Ezulwini could have major impacts on South Deep. The groundwater, surface water and socio-economic impact assessments should consider the potential impacts on neighbouring mines (South Deep). Failure to identify this as a potential impact in the BID leaves out an important piece of information to all stakeholders.	Ms	Joanna Goeller	Environmental Consultant: Gold Fields	24/11/2016	Email in response to the announcement	Notice is taken of the concern. The impacts that the partial closure of Ezulwini (termination of underground operations) may have, have been assessed in the groundwater study, plug design review reports, surface water study, socio-economic study, as well as the impact assessment. These are part of the Consultation Basic Assessment Report, which is available for review by all Interested and Affected Parties (I&APs).
The following should be assessed: 1. Impact of closure on downstream surface water quality of the Rietspruit. 2. Groundwater recharge will flow out of the Gemsbokfontein Eye and discharge to the Wonderfonteinspruit. Is there an indication that groundwater discharge to the Rietspruit catchment could take place? 3. Potential discharge of AMD into the headwaters of the Rietspruit catchment.	Mr	Marc De Fontaine	Senior Water Quality Advisor - Barrage Catchment: Rand Water	24/11/2016	Email in response to the announcement	This has been addressed in the surface water study report compiled by J&W. Groundwater recharge is unlikely to occur – please refer to the groundwater specialist report. There is no risk of AMD discharging into the Kleinwes Rietspruit nor the Leeuspruit

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Alternative options to closure and flooding exists, and needs detailed exploring. The abovementioned scientists, in conjunction with the mine owner and other interested parties are in the process of establishing the feasibility of underground pumped hydro energy storage as an alternative use for disused shafts / underground mine infrastructure.		Dr. Frank Winde (FW), Ewald Erasmus (EE), Friederike Kaiser (FK), Emile Hoffman (EH)	Mine Water Research Group - North-West University, Vaal Campus	26/11/2016	Email in response to the announcement	Noted. Noted. Frank Winde is currently involved in a study to address these interests and is working with Sibanye on this.
Effectively all the issues / concerns related to the flooding of other mining basins apply, most of these are not adequately addressed in the current background information document.		Dr. Frank Winde (FW), Ewald Erasmus (EE), Friederike Kaiser (FK), Emile Hoffman (EH)	Mine Water Research Group - North-West University, Vaal Campus	26/11/2016	Email in response to the announcement	This has been addressed in the specialist reports and the BAR.
Concerned about AMD decant.	Mr	Musa Zwane	West Rand District Municipality	25/11/2016	Email in response to the announcement	The specialist studies have indicated that there is little to no risk of AMD discharging into the Kleinwes Rietspruit, Leeuspruit nor the Wonderfonteinspruit due to the termination of pumping of water from underground workings at Ezulwini. Monitoring will be undertaken and if contamination as a result of the re-watering of the mine is detected, Sibanye will pump and treat the water.
Who should take responsibility for the rewatering risks? FWRDA does not take responsibility anymore and Geotechnical committee is dysfunctional. Should there not be another fund established for this new period of uncertainty.	Mr	Ben van Niekerk	Rand West City Local Municipality	28/11/2016	Telephonic contribution	The concern is noted. The Government Task Team on Mine Closure and Water Management can be requested to orchestrate the development

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						of such a fund if deemed necessary.
The office of the executive Mayor acknowledged receipt of the Background Information Document, and also indicated that the BID has been referred for consideration and feedback	Ms	Lunelle Serobatse	City of Johannesburg Metropolitan Municipality	29/11/2016	Email in response to the announcement	Noted.
I would like to register as an interested and affected party for the planned closure process of Sibanye Gold underground workings of the Ezulwini Operations.	Mr	JP van der Merwe	Private	30/11/2017	Email in response to the announcement	Noted.
How will the proposed project affect the Klein-Rietspruit and boreholes?	Mr Ms	Gerhard and Margie van Vuuren	Farm Hartebeestfontein	07/12/2016	Registration and Comment form	Surface water flow in the Kleinwes Rietspruit will be significantly reduced. Boreholes in the area will not be affected – in fact water levels in the dolomitic aquifer associated with the Gemsbokfonteinwes compartment are likely to rise.
Sibanye has not shared or made known its closure strategy for Cooke 4 (Ezulwini). As such, of grave concern to South Deep is the risk of flooding and the uncertainty of the impact (at this stage) on health & safety of employees and potential sterilisation of a resource, in the event of a catastrophic event. As such, it is critical that Sibanye details its strategy in respect of its compliance to inter alia Section 43 of the MPRDA and Section 24 of the NEMA Amendment Act insofar it relates to: • Health and safety vis-à-vis interconnectivity of other mines; • Management of pollution of water resources; • pumping and treatment of extraneous water; • Whether sufficient financial provisioning has been made place to the extent that there are residual environmental impacts which would include the pumping of extraneous water.	Ms	Jana Strydom	South Deep Gold Mine (Gold Fields Operations Limited and GFI Joint Venture Holdings (Pty) Limited)	13/12/2016	Registration and Comment form	The risk to South Deep has been assessed in a peer reviewed report, entitled – "*Assessment of the water barrier pillar and the water plugs placed between Ezulwini Shaft and South Deep shaft*" compiled by SRK (July 2017).

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The issues raised in the Registration and Comment form are not intended to be an exhaustive list of issues that should be considered, but merely highlights the immediate key concerns of South Deep.						
Concerned about the safety of South Deep's underground workings and the potential risk to employees and the gold resource, which has an estimated life of mine of up to 2086 (in the event of failure of the plugs or boundary pillar.	Ms	Jana Strydom	South Deep Gold Mine (Gold Fields Operations Limited and GFI Joint Venture Holdings (Pty) Limited)	13/12/2016	Registration and Comment form	Addressed in the "*Assessment of the water barrier pillar and the water plugs placed between Ezulwini Shaft and South Deep shaft*" compiled by SRK.
Concerned that the boundary pillar between South Deep and Ezulwini may not hold back the increased water and pressure build-up. In the event of the above, South Deep may never recover back to full operation.	Ms	Jana Strydom	South Deep Gold Mine (Gold Fields Operations Limited and GFI Joint Venture Holdings (Pty) Limited)	13/12/2016	Registration and Comment form	Addressed in the "*Assessment of the water barrier pillar and the water plugs placed between Ezulwini Shaft and South Deep shaft*" compiled by SRK.
If Sibanye do not have the design plans for the boundary pillar (allegedly burnt in the Harmony James Park Office fire) does the DMR have copies of this. Is it not a requirement for them to submit plans to the DMR annually?	Ms	Jana Strydom	South Deep Gold Mine (Gold Fields Operations Limited and GFI Joint Venture Holdings (Pty) Limited)	13/12/2016	Registration and Comment form	Addressed in the "*Assessment of the water barrier pillar and the water plugs placed between Ezulwini Shaft and South Deep shaft*" compiled by SRK.
South Deep would require time to retrofit the plugs on 50 level to decant water from Ezulwini to South Deep as a water supply option (before Ezulwini stops pumping and the water level reaches 50 level).	Ms	Jana Strydom	South Deep Gold Mine (Gold Fields Operations Limited and GFI Joint Venture Holdings (Pty) Limited)	13/12/2016	Registration and Comment form	This issue will be addressed in direct discussions between Ezulwini and South Deep. It is noted that the groundwater level has been at 50 level for several years.

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What will Sibanye be doing to secure the infrastructure at Cooke 4 to prevent illegal mining and theft?	Ms	Jana Strydom	South Deep Gold Mine (Gold Fields Operations Limited and GFI Joint Venture Holdings (Pty) Limited)	13/12/2016	Registration and Comment form	While the above-ground gold plant remains in operation, security measures will remain unaltered above-ground. The underground infrastructure will be dismantled or where it remains, will be submerged over time. In line with good practice, the Socio-Economic Impact Assessment (SEIA) Report recommends that the current mine shaft openings be clearly marked and blocked to prevent illegal entry to the underground shaft. Since underground linkages to South Deep and Cooke 3 will be blocked, the only entry point to Cooke 4 will be through its own shaft, which will be flooded over time.
South Deep would like to engage directly with Sibanye to look at alternatives to halting the pumping, due to severity of the risk to South Deep.	Ms	Jana Strydom	South Deep Gold Mine (Gold Fields Operations Limited and GFI Joint Venture Holdings (Pty) Limited)	13/12/2016	Registration and Comment form	Such interaction has been taking place and continuous discussions between the mines' respective management teams is underway. South Deep has undertaken to approach Sibanye Gold to discuss alternatives to the halting of pumping.
Have all downstream water users been engaged as stakeholders – including the community at the Thusanang Informal Settlement, the Gold Alliance and its service providers Servigraph and AfriGrow Development; and other farmers along the Leeuspruit.	Ms	Jana Strydom	South Deep Gold Mine (Gold Fields Operations Limited and GFI Joint Venture Holdings (Pty) Limited)	13/12/2016	Registration and Comment form	There will be a significant reduction in flow only in the Kleinwes Rietspruit, which may have a significant negative impact on surface water users, such as farmers. Since 2013, Sibanye Gold has not been discharging water into the Leeuspruit on a continuous

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						basis, therefore the Thusanang community will not be affected by the rewatering of Ezulwini from a surface water perspective. It has been recommended in the EMPr that Sibanye Gold continues to be involved in community project developments and to address the potential impact as part of their Social and Labour Plan (SLP). It is recommended that the SLP should consider impacts as a result of the termination of pumping. Landowners that may potentially be affected have been contacted as part of the SEIA to conduct a high-level assessment of income losses. Background information documents, advertisements and site notice boards were placed and distributed during the stakeholder engagement process. Contact has been made with Ward Councillors. Meetings were held with the land owners and the municipalities as part of the public participation process.
What is the impact on activities of downstream water users and land owners?	Ms	Jana Strydom	South Deep Gold Mine (Gold Fields Operations Limited and GFI Joint Venture Holdings (Pty) Limited)	13/12/2016	Registration and Comment form	See response above and refer to the surface water impact study for more detail. The impacts vary from potential loss of income for farmers, workers and farm suppliers due to reduction in irrigated crops, (estimated R57-million per

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						annum) as well as income losses to Waterpan golf club workers (R0.5-million per annum) if the Golf Club needs to close due to restricted water availability. Some seven farms were identified that potentially face high impacts from reduced water levels. Mitigatory measures have been included in the EMPr and Closure Plan.
What is the impact on the Gold Alliance Agricultural Programme's existing and planned projects and how will this be managed?	Ms	Jana Strydom	South Deep Gold Mine (Gold Fields Operations Limited and GFI Joint Venture Holdings (Pty) Limited)	13/12/2016	Registration and Comment form	The GAAP farms at Kalbasfontein 7 and Waterpan 23 potentially face high negative impacts since these areas rely on water for vegetable production. The SEIA recommends that Sibanye Gold in collaboration with the Rand West LM and West Rand District Municipality have continuous discussions with affected farmers (including other Gold Alliance Partners) and the Waterpan Golf Club to resolve potential job losses related to water availability and water quality via existing forums. The agenda needs to include roles and responsibilities to mitigate potential job losses, as well as roles and responsibilities for the future monitoring of water quality in both the Leeuspruit and Kleinwes Rietspruit. One option Sibanye has proposed as a mitigatory

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						measure, in alignment with the Gold Alliance Agricultural Programme, is to repurpose some of the Ezulwini surface infrastructure, to be used for agro-processing or other agricultural purposes. These mitigatory measures are included in the EMPr and Closure Plan.
What is the impact on artisanal and small scale /Zama Zamas existing and potential activity?	Ms	Jana Strydom	South Deep Gold Mine (Gold Fields Operations Limited and GFI Joint Venture Holdings (Pty) Limited)	13/12/2016	Registration and Comment form	The mine itself will be re-watered. There is no chance that illegal mining can take place once the mine is re-watered, except if the illegal miners can dewater the mine at a significant rate. In addition, mine infrastructure at surface will be secured and access will be monitored. The shafts may also be plugged as a safety measure.
Why does Sibanye not continue pumping the water to ensure sustainability of farming in the Leeuspruit and Klein Wes Rietspruit?	Ms	Jana Strydom	South Deep Gold Mine (Gold Fields Operations Limited and GFI Joint Venture Holdings (Pty) Limited)	13/12/2016	Registration and Comment form	Sibanye Gold cannot pay for such pumping indefinitely as they are experiencing significant financial losses as a result of the need to continue pumping. From an economic perspective, the annual costs to continue pumping (expected to be R 156 million in 2017) by far outweigh the benefits if pumping were to continue (approximately R57-million per annum in respect of agricultural losses). In addition, the long-term suitability of the pumped water to irrigate especially

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						horticultural crops is furthermore a contentious issue due to the quality of the water.
Can Sibanye not create a sustainable project for the supply and / or treatment of the water for their own or others use?	Ms	Jana Strydom	South Deep Gold Mine (Gold Fields Operations Limited and GFI Joint Venture Holdings (Pty) Limited)	13/12/2016	Registration and Comment form	Given the high electricity costs associated with pumping (R13 million per month) the timeframe to develop an alternative is one of the main issues. Sibanye Gold for example approached Rand Water to investigate their interest to take over the pumping and supply of underground mine water. While interest was expressed, an agreement would take over a year to finalise and would require authorisation and co-operation from governmental regulatory bodies. The ongoing financial losses cannot be sustained.
South Deep indicated that to facilitate the process of developing an Emergency Response Plan they require information from the specialist studies which are currently being undertaken by Jones & Wagener. South Deep then requested to be furnished with reports from the specialist studies prior to the public review period of the Consultation Basic Assessment Report.	Ms	Jana Strydom	South Deep Gold Mine (Gold Fields Operations Limited and GFI Joint Venture Holdings (Pty) Limited)	January 2017	Telephonic discussion	The specialist studies were provided to South Deep in February 2017. Copies of an updated Emergency Response Plan were provided to Jones & Wagener by South Deep on 8 August 2017 and has been attached to the CBAR (Appendix H.5).
It is very unfortunate to learn that you are intending to close the underground workings of Sibanye Ezulwini operations. This has drastic effect on us as you are well aware that your intentions to use some of your de-watering water for irrigation purposes.	Mr	Herman Brauer	PA van Graan Farming CC	14/12/2016	Email Correspondence	Noted.
As previously stated we plant white maize, which we add value to, by milling it ourselves to make IPAPA Super Maize Meal. IPAPA is distributed through	Mr	Herman Brauer	PA van Graan Farming CC	14/12/2016	Email Correspondence	Noted.

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Soweto and neighbouring areas at a much reduced cost. We supply small "spaza" shops which compete directly with larger corporate companies to make an earnest and sustainable living.						
This entails a complete cycle which impacts our immediate community greatly. Both in terms of sustainable job creation and skills development as well as staple food security.	Mr	Herman Brauer	PA van Graan Farming CC	14/12/2016	Email Correspondence	Noted.
Based on the fact that you committed to help us with water, we have incurred a vast amount of expenses in our business model. We have embarked on the process to build our new milling facility on the Waterpan farm. We have also finalised and committed to new high density irrigation equipment.	Mr	Herman Brauer	PA van Graan Farming CC	14/12/2016	Email Correspondence	Noted. Sibanye Gold welcomes interaction with Mr Brauer to address concerns. Interaction has taken place and is still underway.
In light of your intended closure and the prospect of no water, we request electrical power supply from you. Similar to what you currently do for Mitchell Projects and Servigraph	Mr	Herman Brauer	PA van Graan Farming CC	14/12/2016	Email Correspondence	This request has been forwarded to Sibanye Gold for their consideration. Mr Johan Wagner (Sibanye Group Water Consultant) emailed Mr Brauer, however no response has been received.
We intend to using electrical power for irrigation purposes as well or new mill. It will also be used in future to pump water when the water levels normalise.	Mr	Herman Brauer	PA van Graan Farming CC	14/12/2016	Email Correspondence	Noted.
We sincerely appreciate your assistance and kindly ask that you advise as soon as possible on how to implement our request.	Mr	Herman Brauer	PA van Graan Farming CC	14/12/2016	Email Correspondence	Noted.
We would like to point out that we act in good faith and that we had no objection and allowed the installation of your wooden poles for telecommunication purposes on our farm. It must be noted that the high volume road Mr Ian Hansrachan negotiated through our farm, in exchange for irrigation water, is approximately three years old. It seems to be working well for you from our perspective, unfortunately we haven't had the privilege of one drop yet.	Mr	Herman Brauer	PA van Graan Farming CC	14/12/2016	Email Correspondence	Noted.

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Requested that future correspondence regarding the proposed project be directed to Venter & von Abo Attorneys.	Mr	Rufus von Abo	Venter and von Abo Attorneys	16/01/2017	Email Correspondence	Noted.
Requested to be provided with a Registration and Comment form.	Mr	Rufus von Abo	Venter and von Abo Attorneys	16/01/2017	Email Correspondence	A Registration and Comment form was sent to Mr von Abo.
Indicated that he has been practising within the project area for over 30 years as such, he could possibly assist with landowner details.	Mr	Rufus von Abo	Venter and von Abo Attorneys	16/01/2017	Email Correspondence	Noted.
Requested that his client be registered as an Interested and Affected Party for the proposed project.	Mr	Rufus von Abo	Venter and von Abo Attorneys	16/01/2017	Email Correspondence	Noted.
Indicated that the proposed closure will have a devastating effect on his business and farm.	Mr	Francois van Schalkwyk	Portion 12, Farm Waterpan-Westonaria	14/02/2017	Email Correspondence	Noted. Please refer to the Socio-economic Impact Report.
Stated that the water supply is crucial and they need water to survive.	Mr	Francois van Schalkwyk	Portion 12, Farm Waterpan-Westonaria	14/02/2017	Email Correspondence	Noted.
A lot of people will be affected by the proposed project.	Mr	Francois van Schalkwyk	Portion 12, Farm Waterpan-Westonaria	14/02/2017	Email Correspondence	Please refer to the Socio-economic Impact Report.
Requested for a salt load assessment to be undertaken as part of the Basic assessment process.	Mr	Angelo De Andrade,	Lucky Farms	03/03/2017	Email Correspondence	Addressed in surface water study report.
Concerned that the proposed project will affect his farming operations located in Sebokeng and the processing facility in Westonaria.	Mr	Angelo De Andrade,	Lucky Farms	03/03/2017	Email Correspondence	Acknowledged. A significant reduction in the surface water flow of the Kleinwes Rietspruit will occur on the section where their Lucky Farm is located.
Mr Angelo sent GPS co-ordinates of a farm property in Westonaria. He pointed out that the land in question (as per the GPS co-ordinates) borders his farm in Westonaria. The farm is currently not in use, he then proposed that in order to off-set losses in terms of water in the Kleinwes Rietspruit he requested to have more land close to his farm along the R24 from Sibanye. The proposed offset has a	Mr	Angelo De Andrade,	Lucky Farms	03/03/2017	Email Correspondence	Noted. The message was relayed to Sibanye Gold for their consideration. In the EMPr it is also recommended that Sibanye Gold continues to be involved in job creation projects, which includes agricultural projects. Sibanye

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potential of sustaining business and employment.						Gold has commenced discussions with Mr De Andrade to address his concerns.
Requested to meet with Mr Philip Jacobs (Sibanye Gold) to discuss the possibility of mitigating job losses.	Mr	Angelo De Andrade,	Lucky Farms	03/03/2017	Email Correspondence	Meetings have been held with Mr De Andrade (24/03/2017).
Concerned that Sibanye does not recognize job losses as a crisis	Mr	Angelo De Andrade,	Lucky Farms	03/03/2017	Email Correspondence	Sibanye Gold is fully aware of job losses and has redeployed most of the Ezulwini workforce to other sections of Sibanye Gold. It is recommended that job losses due to the impact on agriculture along the Kleinwes Rietspruit be addressed as part of Sibanye's Social and Labour Plan.
Water is sampled monthly and the results are used to select appropriate crops that minimise the risk of impact on humans and livestock. The quality has fluctuated over the past year in terms of volume and quality. No significant problems have been noted to date with the exception of interruptions due to mining maintenance processes. These interruptions happen without warning and cause serious issues on the operational activities of these farms. Therefore, the key concern that needs to be raised in the need for consistent discharge of water so as to avoid farming production related delays and possible losses. It should be noted that the inputs required to date to return the land to agricultural status has cost us millions and was implemented due to the soil and water results from regular sampling.	Mr	Cobus Nel	Waterpan (Servigraph 42 cc) Land leased from Sibanye	07/12/2017	Email Correspondence	Noted.
If Ezulwini stops pumping underground water our farming activities will be severely impacted on. The volume of water that is currently available will need to be replaced so as to prevent financial losses on our part. Surface boreholes will not replace the current water supply but will help to reduce the impact of the	Mr	Cobus Nel	Waterpan (Servigraph 42 cc) Land leased from Sibanye	07/12/2017	Email Correspondence	Your comment is noted and has been brought to the attention of EMC. EMC has indicated that any underground water used by farmers was done on a no obligation or

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water not being discharged. The mine needs to assist us in drilling in appropriate sites so that we have an alternative water source. However, we reserve our right to claim for both current and future production losses as well as the inputs applied to date to restore the land to a productive status due to the stopping of the water supply by Ezulwini.						liability basis from the company's side. The EAP therefore suggests that a formal claim be lodged with EMC in this regard as this is likely to result in a legal dispute which cannot be resolved as part of the environmental assessment process.
Eskom acknowledged that they have Tx (transmission) and Dx (distribution) infrastructure in the application area and that they will contact the EAP should there be a need for further discussion.	Mr	J L de Klerk	Middle Manager, Portfolio Land Management Group Capital – Eskom Real Estate	24/11/2017	E-mail correspondence	Noted
Requested to be registered as an Interested and Affected Party (I&AP).	Ms	Mashudu Mukwevho	Resource Auditor Dir: Land Use & Soil Management Dept of Agriculture Forestry & Fisheries (DAFF)	28/11/2017	E-mail correspondence	Ms Mashudu was registered as an I&AP.
Correspondence was received and acknowledged. Reference number is: 3023			Private Office of the Executive Mayor City of Johannesburg	29/11/2017	E-mail correspondence	Noted.
Can the water not be harvested for further use such as for farming?		MMC: Infrastructure (Mr Dumile)	Rand West City Local Municipality	15/03/2017	Mayoral Committee Meeting – Rand West City Local Municipality	Sibanye has had negotiations with several parties with regards to alternatives, however, no such alternatives came to fruition. The pumping of water from underground currently costs Sibanye in excess of R 13 million per month. This is not sustainable for Sibanye and would not lead to a sustainable farming practice due to the quality of the water.
Can only government comment on this process?		MMC:	Rand West City	15/03/2017	Mayoral Committee	A public participation process

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Who else are involved?		Infrastructure (Mr Dumile)	Local Municipality		Meeting – Rand West City Local Municipality	as prescribed by the NEMA is being followed. Advertisements and site notices were placed, inviting any person to become involved, not only government.
What is in this proposal for the people of this area?		MMC: Infrastructure (Mr Dumile)	Rand West City Local Municipality	15/03/2017	Mayoral Committee Meeting – Rand West City Local Municipality	Some social projects as listed in the Social and Labour Plan may continue (refer to Table 1-3 in the Closure Plan).
As a municipality, we would like to be part of the decision-making process to allow or not to allow the proposal made by Sibanye.	Mr	Ben van Niekerk	Rand West City Local Municipality	15/03/2017	Mayoral Committee Meeting – Rand West City Local Municipality	Rand West City Local Municipality is, according to NEMA, a Commenting Authority in the process and is allowed to engage directly with the Competent Authority, namely the Department of Mineral Resources.
Since this is the first such re-watering process in the area, we cannot with 100% accuracy say what exactly the impacts would be, therefore it is important for this community that Sibanye will be able to take care of unforeseen eventualities. The reports which will be produced as part of the EIA process should include plans for such eventualities.	Mr	Ben van Niekerk	Rand West City Local Municipality	15/03/2017	Mayoral Committee Meeting – Rand West City Local Municipality	Noted. The EMPr (Table 3-24) has been updated to include funds to be allocated to remediation and compensation for sinkholes and subsidence (attributed to re-watering of the Ezulwini underground workings). A subsidence and sinkhole management plan has also been developed (Appendix C.2).
The formation of sinkholes in Carletonville has taught us a lesson in terms of how we will deal with such risks in future. Mechanisms on how best to deal with risks should be included in the reports for review.		MMC: Housing	Rand West City Local Municipality	15/03/2017	Mayoral Committee Meeting – Rand West City Local Municipality	Noted, procedures will be the same as dealing with sinkholes during the dewatering phase. The procedure is included in the final report.
Comments received on the Consultation Basic Assessment Report (Public review period from 3 April to 21 May 2017)						
Biomonitoring Report of the Leeuspruit must be included in the FBAR and EMPr	Ms	Mashudu Ratshitanga	Impact Assessment Sub-	08/05/2017	Letter per email	The biomonitoring report has been included as Appendix C

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			Unit, City of Joburg			of the FBAR/EMPr.
Sediment sampling in the Kleinwes Rietspruit must be undertaken to determine whether sediment is contaminated.	Ms	Mashudu Ratshitanga	Impact Assessment Sub-Unit, City of Joburg	08/05/2017	Letter per email	Noted. The DWS has confirmed that a directive to Sibanye to undertake the sediment clean-up and wetland rehabilitation upstream of the Peter Wright Dam, as per Sibanye's 2016 wetland rehabilitation report, is pending and will be issued shortly.
Alternative mitigation measures for the contamination of sediment in the Kleinwes Rietspruit must be developed and included in the FBAR and EMPr	Ms	Mashudu Ratshitanga	Impact Assessment Sub-Unit, City of Joburg	08/05/2017	Letter per email	The surface rehabilitation will be the focus of the full closure plan at a later date. This application is for the cessation of pumping from underground workings only.
Erosion mitigation measures along both the Leeuspruit and Kleinwes Rietspruit must be included in the FBAR and EMPr and must be implemented prior to the cessation of pumping. Mitigation measures must include seeding or the planting of vegetation sods to speed up the vegetation succession.	Ms	Mashudu Ratshitanga	Impact Assessment Sub-Unit, City of Joburg	08/05/2017	Letter per email	Erosion monitoring is to be undertaken as part of the EMPr and Closure Plan – therefore, if significant erosion is identified, mitigatory measures must be developed. Surface remediation measures are not part of this application and will be addressed by Sibanye in a separate application.
Rehabilitation of the wetlands upstream of the Peter Wright Dam and downstream of the Ezulwini Operation must be undertaken and the Wetland Rehabilitation Plans must be submitted to this Department for review.	Ms	Mashudu Ratshitanga	Impact Assessment Sub-Unit, City of Joburg	08/05/2017	Letter per email	Noted. The DWS has confirmed that a directive to Sibanye to undertake the sediment clean-up and wetland rehabilitation upstream of the Peter Wright Dam, as per Sibanye's 2016 wetland rehabilitation report, is pending and will be issued shortly.
Implement groundwater monitoring programme and should be monitored as follows: • Monthly during the lead-up to the cessation of pumping;	Ms	Mashudu Ratshitanga	Impact Assessment Sub-Unit, City of Joburg	08/05/2017	Letter per email	This has been provided for in the proposed monitoring programme in the EMPr (Section 1f).

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• Twice a month during the re-watering process; and • Monthly after the Gemsbokfontein eye starts flowing for a period of three years.						
Groundwater quality must be monitored as follows: • Twice a year during the lead-up to the cessation of pumping; • Twice a year during the re-watering of the mine; • Quarterly during the recovery of the dolomitic aquifer and during the first three years after the eye starts flowing.	Ms	Mashudu Ratshitanga	Impact Assessment Sub-Unit, City of Joburg	08/05/2017	Letter per email	This has been provided for in the proposed monitoring programme in the EMPr (Section 1f).
The existing Dolomite Risk Management Strategy must be reviewed by an independent expert geopractitioner prior to the commencement of the re-watering to ensure that it is in accordance with the requirements of SANS 1936-4.	Ms	Mashudu Ratshitanga	Impact Assessment Sub-Unit, City of Joburg	08/05/2017	Letter per email	This is a recommendation of the Geohydrological and Stability Assessment (Appendix C). Sibanye has committed to undertake this prior to re-watering.
After pumping at Ezulwini ceased the mine must continue to monitor the water quality at the existing monitoring points along the Leeuspruit and Kleinwes Rietspruit to assess the impact of the remaining mine related infrastructure on the surface water regimes associated with the mine. Monitoring (full chemical suite of variables) must be conducted on a monthly basis as per the current monitoring programme and must continue for three years of the cessation of pumping.	Ms	Mashudu Ratshitanga	Impact Assessment Sub-Unit, City of Joburg	08/05/2017	Letter per email	This has been provided for in the proposed monitoring programme in the EMPr (Section 1f).
The flow point and water quality at the Gemsbokfontein Eye must be monitored for three years after the eye has started to flow.	Ms	Mashudu Ratshitanga	Impact Assessment Sub-Unit, City of Joburg	08/05/2017	Letter per email	This has been provided for in the proposed monitoring programme in the EMPr (Section 1f).
Monitor the PES, EIS and Ecosystem Services in the Kleinwes Rietspruit for three years.	Ms	Mashudu Ratshitanga	Impact Assessment Sub-Unit, City of Joburg	08/05/2017	Letter per email	This has been provided for in the proposed monitoring programme in the EMPr (Section 1f).
The three year aquatic bio-monitoring programme, recommended by the Natural Scientific Services cc (NSS) (2014) must be undertaken.	Ms	Mashudu Ratshitanga	Impact Assessment Sub-Unit, City of Joburg	08/05/2017	Letter per email	This has been provided for in the proposed monitoring programme in the EMPr

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						(Section 1f).
Tailings must be removed and placed on existing tailings facilities to reduce Uranium levels.	Ms	Mashudu Ratshitanga	Impact Assessment Sub-Unit, City of Joburg	08/05/2017	Letter per email	This will be undertaken as part of the Kleinwes Rietspruit Wetland Rehabilitation Plan.
A copy of the initial communication by First Uranium Mining company with our client (AJ van Schalkwyk) confirming the fact that he has been receiving water uninterrupted since 2007 was provided to J&W. Reference was made to the bullet points on page xi of the CBAR recommending, inter alia, the following: "Sibanye must continue engaging in forums in collaboration with local development agents to discuss potential impacts and mitigation measures regarding the income losses for farmers and agricultural workers in the agricultural sector." In view of the above, and also in line with the response by the Applicant to similar concerns raised by other affected parties, our client wishes to urgently engage with the Applicant in an attempt at finding a solution for his particular concerns. Please convey the contents of this letter to the relevant person(s) with the invitation to contact the writer hereof as a matter of priority for such discussion.	Mr	Rufus von Abo	Venter and von Abo Attorneys	05/04/2017	Letter per email	Noted. Sibanye will engage with Mr van Schalkwyk.
Requested the collection of two electronic copies of the CBAR and EMPr.	Ms	Kira-Lee Kelvin	Werksmans Attorneys	05/04/2017	Email correspondence	Two CD copies of the reports were made available and collected on 06/04/2017.
The application does not affect the Generation Business Unit in Eskom, I am however forwarding same to the Distribution (Curtis Meintjies) and Transmission (Ntika Maake) Eskom Business Units for their determination and further action if so required.	Mr	J L de Klerk	Middle Manager, Portfolio Land Management Group Capital – Eskom Real Estate	31/03/2017	Email correspondence	Noted.
The far West Rand has experienced an extreme economic situation since the dewatering as it has killed the economic stability and future of the area. We have never experienced an economic up-turn and is therefore very concerned that the re-watering may have further very negative impacts on this area. We cannot for certain say that the re-watering may	Mr	Ben van Niekerk	Rand West City Local Municipality	03/04/2017	Meeting with the Rand West City Local Municipality	The opinion of the specialists that were consulted, including the review consultants, is that the impact (if any) due to re-watering will be significantly less than during dewatering and only for a limited duration.

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not have a worse impact than the de-watering and Mr Van Niekerk referred to statements and opinions of Dr [Kleiweg] – a specialist in geotechnical matters and dolomite.						The Gemsbokfontein West compartment has also not experienced the same dewatering impacts as the other compartments in the area. Where risk areas were identified the people were relocated and structures demolished.
We are concerned about dykes that may leak – how certain can we be that the dykes will not leak? At the GTT meeting attended earlier we have learnt of concerns from other mines about leaking dykes.	Mr	Ben van Niekerk	Rand West City Local Municipality	03/04/2017	Meeting with the Rand West City Local Municipality	There is some leakage across the Panvlakte and Magazine dykes into the Gemsbokfontein West compartment. This will however not impact on the ground stability as this has occurred throughout the dewatering phase.
The Wonderfonteinspruit pipeline is old, silted up and the municipal waste water treatment works release some water into that pipeline. Have you checked the current situation with regards to the pipeline's capacity? If the capacity is not sufficient, the water may leak from the pipeline and that may further assist with the formation of sinkholes and the water may never reach Carletonville. As a municipality, we are also concerned about areas outside the compartment in which the mine is situated.	Mr	Ben van Niekerk	Rand West City Local Municipality	03/04/2017	Meeting with the Rand West City Local Municipality	The pipeline was designed with a capacity of 120 Ml, however it is currently operating at a capacity of 100 Ml so there is a risk of overflow into the Wonderfonteinspruit if the capacity is exceeded. However, this overflow water will be lost to sinkholes, which will report to Sibanye Gold's Kloof operations. It is also possible that Sibanye's WRTRP may be in place by the time the Gemsbokfontein Eye flows again, which will reduce the water volumes in the Wonderfonteinspruit.
As stated in earlier meetings we would feel comfortable if the principles by which the Far West Rand Dolomitic Water Association (FWRDWA) operated during the dewatering can be revived again, as it is almost impossible for an individual to have	Mr	Ben van Niekerk	Rand West City Local Municipality	03/04/2017	Meeting with the Rand West City Local Municipality	Noted. Sibanye Gold still operates by these principles, despite the FWRDWA not being active. However, the FWRDWA is in the process of

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recourse and damages paid due to incidences related to sinkhole damages, etc. The establishment of a fund for payments of unforeseen costs is one of our recommendations.						being re-established. The EMPr (Table 3-24) has been updated to include funds to be allocated to remediation and compensation for sinkholes and subsidence (attributed to re-watering of the Ezulwini underground workings). A subsidence and sinkhole management plan has also been developed (Appendix C.2).
We are concerned about water quality. We have a situation where polluted mine water is decanting into the spruit in the Lion Park in the Roodepoort area – why will this not happen in this case?	Mr	Ben van Niekerk	Rand West City Local Municipality	03/04/2017	Meeting with the Rand West City Local Municipality	The geological setting where mine water is decanting from the West Rand Basin is completely different from the Ezulwini situation. Contaminated mine water will be contained in the mine workings due to the hydrostatic pressure and will not decant.
Are you consulting with the roleplayers in charge of the N12, R28 roads (Sanral), Sasol and Transnet – their infrastructure may also be impacted upon? Such organisations can also assist with the revival of a fund similar to the previous FWRDWA.	Mr	Ben van Niekerk	Rand West City Local Municipality	03/04/2017	Meeting with the Rand West City Local Municipality	Noted. These role-players are on the stakeholder list and as such have received all correspondence with regards to this project.
Simunye residential area is almost in the middle of the project area – how certain are we that they will not be affected?	Mr	Ben van Niekerk	Rand West City Local Municipality	03/04/2017	Meeting with the Rand West City Local Municipality	Simunye's location was approved by the Council of Geoscience as the stability risk for this area is low, nonetheless Sibanye will treat the residential areas as priority areas for additional monitoring.
Who will be peer reviewing the reports?	Mr	Ben van Niekerk	Rand West City Local Municipality	03/04/2017	Meeting with the Rand West City Local Municipality	Drs Hendrik and Louis Kirsten reviewed the Plug Design and Review reports. Dr Isak Venter reviewed the geohydrological report.
We need to build into our planning contingencies for	Mr	Ben van	Rand West City	03/04/2017	Meeting with the	Noted. The EMPr (Table 3-24)

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eventualities that may happen that we do not know of now.		Niekerk	Local Municipality		Rand West City Local Municipality	has been updated to include funds to be allocated to remediation and compensation for sinkholes and subsidence (attributed to re-watering of the Ezulwini underground workings). A subsidence and sinkhole management plan has also been developed (Appendix C.2).
The formation of sinkholes during and after the dewater of the mines had an enormous economic impact on the area. The area has never recovered fully – it is critical to have contingency plans and a fund in place for the next phase of re-watering. Also, the question arise for how long should such contingency plans be in place?	Mr	Cassie Pelzer	Rand West City Local Municipality	03/04/2017	Meeting with the Rand West City Local Municipality	Noted. The re-watering impact will likely be less severe than the original dewatering impacts were, and will be of a finite, limited duration. Ground stability will be monitored for 10 years post-cessation of mining. In addition, the FWRDWA is in the process of being revived. The EMPr (Table 3-24) has been updated to include funds to be allocated to remediation and compensation for sinkholes and subsidence (attributed to re-watering of the Ezulwini underground workings). A subsidence and sinkhole management plan has also been developed and is proposed to be in place for 10 years after the cessation of pumping (3 years after the Gemsbokfontein Eye starts flowing) (Appendix C.2).
Will there be seismic activities again during the re-watering process?	Mr	Cassie Pelzer	Rand West City Local Municipality	03/04/2017	Meeting with the Rand West City Local Municipality	Fluid induced seismicity has occurred and will continue to occur, but the seismic hazard is not expected to increase significantly with increasing

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						water pressure. The risk of damage to the plugs or failure of the water barrier is insignificant. There is a possibility of short-term re-watering triggered seismic activity occurring during the re-watering process. This will be monitored and attended to as it was for the dewatering process.
Will the re-water process give us more land for development?	Mr	Cassie Pelzer	Rand West City Local Municipality	03/04/2017	Meeting with the Rand West City Local Municipality	A lower risk classification is attributed to ground that is not de-watered. Therefore, the re-watering of the Gemsbokfontein West dolomitic compartment may free up land for agriculture, that was previously classified as risk areas.
Requested Sibanye to review the water quality provided to people in Waterpan. He also complained about the infrastructure weaknesses to building at Waterpan.	Mr	Wiseman Matshaya	Rand West City Local Municipality	03/04/2017	Meeting with the Rand West City Local Municipality	Mr Grant Stuart of Sibanye Gold committed to take the matter further and it was discussed outside the meeting.
Will people get jobs if the proposal goes ahead?	Mr	Wiseman Matshaya	Rand West City Local Municipality	03/04/2017	Meeting with the Rand West City Local Municipality	The project per se will not provide any job opportunities, however should the water table rise, more water will be available for future opportunities such as farming, etc.
What is the estimated volume that Ezulwini will need to source from Rand Water?			Department of Water and Sanitation (DWS)	13/04/2017	Meeting with the DWS and DMR	The estimated volume is 10Ml/day at an estimated cost of R12.55/Ml. It was also noted that this is just an interim measure and that once the West Rand Tailings Retreatment Project (WRTRP) starts, then this will be

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						reassessed.
Is there an option for South Deep to pump from the Ezulwini workings as the plugs will be sealed?	Ms	Mashudu Maduka	Department of Mineral Resources (DMR)	13/04/2017	Meeting with the DWS and DMR	When the plugs were constructed, pipes through the plugs were installed, together with valves, to facilitate transfer of water if required. South Deep may negotiate an option to pump water from the Ezulwini workings at its own cost although it has not yet submitted a proposal in this regard.
Even though the plug of the collar at Ezulwini shaft is higher than the Eye, will it still not have to be plugged?			DWS	13/04/2017	Meeting with the DWS and DMR	The collar will be plugged as per the DMR requirements. Provision will be made in the collar plug for measuring water quality and levels.
Was it considered to not stopping pumping altogether but rather keeping the pumps and allowing the system to be tested.	Mr	Jimmy Sekgale	DMR	13/04/2017	Meeting with the DWS and DMR	This was considered under Alternative 4 in the geohydrological report.
How can water flow through dolomite as the un-weathered dolomite is impermeable?	Ms	Mashudu Maduka	Department of Mineral Resources (DMR)	13/04/2017	Meeting with the DWS and DMR	The flow of water is through faults and fractures in the non-weathered dolomites.
Is there any indication as to where the risks are in terms of dolomitic instability, as the state needs to be prepared for the worst case?	Ms	Mashudu Maduka	Department of Mineral Resources (DMR)	13/04/2017	Meeting with the DWS and DMR	The rating was very conservative. Simunye was placed on the safest area and its location was approved by the Council of Geoscience. See comments above regarding monitoring & reporting.
Will the suggested satellite imagery be regularly used as part of monitoring for stability or was it just something that was considered?	Mr	Philimon Khwinana	DWS	13/04/2017	Meeting with the DWS and DMR	Satellite imagery will be used. The license is for a year and other more accurate systems are also currently being considered. A ground based approach with surveying will also be used.
The East Basin should be used as a base case for re-watering.			DWS	13/04/2017	Meeting with the DWS and DMR	The water table was completely dewatered there and so it is not

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						relevant as a base case comparison point.
A question was raised regarding the quality of water at BH6 and where this borehole is located in relation to the Eye?	Mr	Philimon Khwinana	DWS	13/04/2017	Meeting with the DWS and DMR	The location of the borehole was showed on a map and it was noted that it is expected that there will be an improvement in the water quality at BH6 and that there is no relation between the mine water and the expected water quality at this borehole. The water quality will be influenced by the aquifer water and urban runoff only.
Concern was raised about the concrete dam at Ezulwini and whether there will by any safety measure put in place for the dam?	Mr	Simon Ngobese	DWS	13/04/2017	Meeting with the DWS and DMR	The dam is not on dolomites, so there is not a safety risk to the dam in this regard. It was also noted that it is not in fact a dam, but rather a small reservoir or tank and will not be needed once the mine no longer pumps water from underground. In addition, Sibanye noted that a valve can be left open in the reservoir so that any rain water collecting in the tank can flow out into the Leeuspruit.
How will the potentially hazardous faults, located outside the mining area, be linked to or affected by re-watering?	Ms	Mashudu Maduka	Department of Mineral Resources (DMR)	13/04/2017	Meeting with the DWS and DMR	Shear and extension fractures will develop parallel to the Ventersdorp Contact Reef abutment and are not expected to migrate across the boundary. This will not affect overall stability, nor permeability. Major seismic events are not expected to be associated with foundation failure, because the stress levels are not high

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						enough. These seismic events are typically associated with very high average pillar stress (>400 MPa). Fluid induced seismicity has occurred and will continue to occur, but the seismic hazard is not expected to increase significantly with increasing water pressure. The risk of damage to the plugs or failure of the water barrier is insignificant.
It was inquired whether the satellite images or surveys do not pick up these faults because the DMR is concerned about the bigger pictures and not just the immediate Ezulwini area.	Ms	Mashudu Maduka	Department of Mineral Resources (DMR)	13/04/2017	Meeting with the DWS and DMR	It is not possible to pick faults up from survey, but rather it would be necessary to do drilling.
Will seismic events be monitored during re-watering.			DWS	13/04/2017	Meeting with the DWS and DMR	Seismic events will be monitored and currently there are systems in place to monitor this. It was also noted that there are two types of events, namely re-watering seismic induced events, as well as external events.
Will the impact of the artificial wetland, upstream of the Peter Wright Dam, will still be high if it is rehabilitated?			DWS	13/04/2017	Meeting with the DWS and DMR	This will be low to negligible depending on the effectiveness of the rehabilitation.
DMR noted that there will not be water available on the southern side of the Gatsrand after pumping stops and what effect this will have on the farmers. In addition, it was asked what their options are.			Department of Mineral Resources (DMR)	13/04/2017	Meeting with the DWS and DMR	In the worst case scenario it will be a loss of jobs if all the farms have to shut (worst case 310 jobs). However, it was noted that the areas to the north of the Gatsrand are most suitable for irrigational farming once the aquifer is restored. Alternatively, the farmers can perform farming operations that do not require as much water.

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						In addition, Sibanye Gold should engage through the existing forums to ensure that job losses are minimised.
The DWS requested that the findings of the study must be presented at the river forums.			DWS	13/04/2017	Meeting with the DWS and DMR	The findings have been presented to the relevant forums – Rietspruit catchment forum was presented to on 9 May 2017 and Wonderfonteinspruit catchment forum was presented to on 30 May 2017.
DMR enquired whether the Department of Agriculture has been consulted or made aware of the project.			Department of Mineral Resources (DMR)	13/04/2017	Meeting with the DWS and DMR	The DAFF is one of the commenting authorities who has received a copy of the reports.
DWS asked where or what the capacity constraint is on the pipeline.			DWS	13/04/2017	Meeting with the DWS and DMR	The pipeline was designed with a capacity of 120 Ml, however it is currently operating at a capacity of 100 Ml so there is a risk of overflow into the Wonderfonteinspruit if the capacity is exceeded. However, this overflow water will be lost to sinkholes, which will report to Sibanye Gold's Kloof operations. It is also possible that Sibanye's WRTRP may be in place by the time the Gemsbokfontein Eye flows again, which will reduce the water volumes in the Wonderfonteinspruit.
Should poor quality water (having AMD-like characteristics) eventually flow at the eye, once workings are fully flooded, how will this be mitigated?			DWS	13/04/2017	Meeting with the DWS and DMR	Should monitoring indicate that poor quality water, originating from the Ezulwini underground mining operations is reporting to the eye, then Sibanye will be responsible for treatment of this

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						water.
Are the findings of the reports (especially with regards to stability) relevant to everything south of Gatsrand?	Mr	Coetzee Badenhorst	Landowner	05/04/2017	Landowner Focus Group Meeting	The area that may potentially be impacted is between Gatsrand 1 and 2. There have been ground stability issues within the dolomite inliers. These areas will be included in the monitoring network.
The statement made about the boundary pillar between Ezulwini and south Deep is not very conclusive.	Mr	Kevin Nicolson	Waterpan Golf club	05/04/2017	Landowner Focus Group Meeting	The study which was conducted by SRK has been updated accordingly as part of this revised CBAR (Appendix C).
What would be the quality of the groundwater and for how long after the cessation of pumping will it be monitored? What will happen after the complete closure of the mine – who will monitor it then?	Mr	Kevin Nicolson	Waterpan Golf club	05/04/2017	Landowner Focus Group Meeting	The groundwater quality is expected to be good (Section 4.7 of the geohydrological specialist report in Appendix C) and will be monitored for 10 years after the cessation of pumping. This has been provided for in the proposed monitoring programme in the EMPr (Section 1f).
I would like my boreholes to be tested too – not just monitoring of certain boreholes and for how long can it be tested?	Mr	Angelo de Andrade	Lucky Farms - landowner	05/04/2017	Landowner Focus Group Meeting	Sibanye invited the landowner to contact them to set up an arrangement for the testing of the boreholes on his land.
Sibanye has not been in the area we operate for a long time to test the levelling loops – therefore the findings of the study should not say that our loops have been surveyed.	Mr	Angelo de Andrade	Lucky Farms - landowner	05/04/2017	Landowner Focus Group Meeting	Noted. J&W has recommended that this be included in future monitoring. The EMPr indicates additional monitoring loops near Mr de Andrade's land.
With what has the mine previously filled the sinkholes which have formed? I know it has been filled with polluted tailings as emergency measures, but what will be the impact of that in the future?	Mr	Piet du Preez	Landowner	05/04/2017	Landowner Focus Group Meeting	Noted. It has never been mine policy to fill sinkholes with tailings. Sinkholes are either filled with grout or inert material. Please refer to Appendix C.2 for the updated sinkhole and subsidence

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						management plan.
The mine has caused a lot of damage in the past and nothing can be done to fix or rehabilitate the damages. Kaalbasfontein has been polluted with uranium.	Mr	Sarel Celliers	Landowner	05/04/2017	Landowner Focus Group Meeting	Noted.
How will the re-water of the groundwater influence us in the Jachtfontein area? There are many fountains which used to flow, but are no longer flowing. Will the re-watering assist with the flowing of the fountains again?	Mr	Piet du Preez	Landowner	05/04/2017	Landowner Focus Group Meeting	The dolomites will re-water and be filled. To the current understanding, landowners in the Jachtfontein area do not have boreholes in the dolomites and will not be influenced by the proposed re-watering. Water flowing from fountains comes from the weathered dolomites – these will not re-water. Landowners are invited to contact the mine's Environmental Department should they wish to discuss specific concerns.
How soon will the water table below the golf course be filled?	Mr	Kevin Nicolson	Waterpan Golf club	05/04/2017	Landowner Focus Group Meeting	It is estimated that it will be filled in approximately seven years.
In our area, there are many sink holes and depressions – why is our information not presented?	Mr	Rudi Burger	Landowner	05/04/2017	Landowner Focus Group Meeting	The records Sibanye received when they took over the Ezulwini mine were incomplete. The mine is busy undertaking a census of all ground movement and sinkholes in the area.
There are big sinkholes around the Peter Right Dam area and on the land of Piet van Graan there are depressions – please include the information.	Mr	AJ (Arrie) van Schalkwyk	Landowner	05/04/2017	Landowner Focus Group Meeting	Noted. The ground stability monitoring will include these areas.
Does the pipeline have the necessary capacity?	Mr	Piet du Preez	Landowner	05/04/2017	Landowner Focus Group Meeting	The pipeline was designed with a capacity of 120 Ml, however it is currently operating at a capacity of 100 Ml so there is a risk of overflow into the Wonderfonteinspruit if the capacity is exceeded. However,

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						this overflow water will be lost to sinkholes, which will report to Sibanye Gold's Kloof operations. It is also possible that Sibanye's WRTRP may be in place by the time the Gemsbokfontein Eye flows again, which will reduce the water volumes in the Wonderfonteinspruit.
How and when will we receive feedback on this study and in general from Sibanye. Earlier there used to be regular feedback sessions, but these no longer take place.			Several landowners	05/04/2017	Landowner Focus Group Meeting	Sibanye invited landowners to contact Mr Grant Stuart who provided his contact details with any queries. He also committed to arrange a meeting with all landowners to establish regular contact. Landowners have had access to all of the reports developed for the Basic Assessment application and have commented on the reports.
Sibanye is still discharging water in the Leeuspruit. It is not true that pumping stopped in 2013 and that there have just been occasional releases.	Mr	Coetzee Badenhorst	Landowner	05/04/2017	Landowner Focus Group Meeting	This was investigated further and it was discovered that a contractor had been in control of the pipeline and was supplying water to South Deep at their request. The water is used by South Deep and no water continues down the Leeuspruit beyond their operations, therefore the results of the impact assessment are still correct and valid.
We do not get water from the mine – when we have asked why our supply was ceased, we were told by the mine that we must fix the water pipeline.	Mr	Andre Tladi	Bosiele Fruit (Bambanani)	05/04/2017	Landowner Focus Group Meeting	Sibanye will contact Mr Tladi and assist with his concern. The pipelines in question belong to the farmer.

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Sibanye must pump and treat water if water quality at the Eye indicates pollution.	Ms	Mashudu Maduka	Department of Mineral Resources (DMR)	10/04/2017	Meeting with the DMR	Although the modelling results have indicated this is highly unlikely to occur, Sibanye commits to pumping and treating any polluted water which results from the re-watering of the dolomitic compartment if the cause is Ezulwini mine related.
Who will be responsible for the maintenance of the Donaldson Dam?	Ms	Mashudu Maduka	Department of Mineral Resources (DMR)	10/04/2017	Meeting with the DMR	The Donaldson Dam is not Sibanye's responsibility, but the Municipality's responsibility. The predicted flow at the Gemsbokfontein Eye will be downstream of the Donaldson Dam.
How was the predicted flow at the Gemsbokfontein Eye estimated and what will the effects of floods be on the flow of the Eye?	Ms	Mashudu Maduka	Department of Mineral Resources (DMR)	10/04/2017	Meeting with the DMR	The volumes were determined by setting up a water balance model of historic flow at the Eye. The model mimicking the historic flow was reversed to predict the effects of re-watering on the Eye. Floods will result in more water flowing in the Wonderfonteinspruit rather than in the pipeline due to the decreased capacity of the pipeline. It is noted that the capacity of the pipeline is likely to increase again when Sibanye's WRTRP commences.
Is Sibanye currently monitoring the Wonderfonteinspruit?	Mr	Jimmy Sekgale	Department of Mineral Resources (DMR)	10/04/2017	Meeting with the DMR	Sibanye confirmed that it does currently monitor the water quality at the Wonderfonteinspruit, as other Sibanye operations discharge to this river. The quality of the

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						river is also affected by upstream sewage treatment works and tailings facilities.
Infrastructure should not have been removed from underground without approval in terms of NEMA for decommissioning	Ms	Mashudu Maduka	Department of Mineral Resources (DMR)	10/04/2017	Meeting with the DMR	A legal opinion letter was written to the DMR in this regard – see Appendix F.8 of the BAR.
Will re-watering change the risk profile of the area with regards to stability?	Ms	Mashudu Maduka	Department of Mineral Resources (DMR)	10/04/2017	Meeting with the DMR	During the re-watering period there is potential for renewed ground movement. These are however expected to be outside the inhabited areas and stability will be reached once the groundwater level has recovered. Please refer to sections 6.7 and 6.8 of the geohydrological report (Appendix C).
How long will groundwater monitoring continue for after re-watering?	Ms	Mashudu Maduka	Department of Mineral Resources (DMR)	10/04/2017	Meeting with the DMR	Monitoring will continue for 3 years after the Eye begins to flow again (10 years total, from cessation of pumping). This has been provided for in the proposed monitoring programme in the EMPr (Section 1f).
What is Sibanye's proposed way to deal with sinkholes if they do occur? Will Sibanye monitor the risk of instability and evacuate people before subsidence occurs?			Department of Mineral Resources (DMR)	10/04/2017	Meeting with the DMR	Sibanye Gold still operates by the principles of the FWRDWA, despite the FWRDWA not being active. The EMPr (Table 3-24) has been updated to include funds to be allocated to remediation and compensation for sinkholes and subsidence (attributed to re-watering of the Ezulwini underground workings). Sibanye's stability monitoring programmes will remain in

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						place and any communities at risk will be evacuated where necessary.
Pillar failure has been experienced at less than 3.4 magnitude (approx. 1.4). Further comprehensive deliberations between South Deep and Ezulwini are required. Require something in writing from South Deep stating that they are comfortable with plans.			Department of Mineral Resources (DMR)	10/04/2017	Meeting with the DMR	A meeting with South Deep was held on 25 May 2017, and a workshop with South Deep was held on 27 June 2017 to have further deliberations. The SRK specialist reports have been updated and address this issue in detail. (Appendix C).
Did Sibanye align with South Deep's 10-year business plan?			Department of Mineral Resources (DMR)	10/04/2017	Meeting with the DMR	The only area where both South Deep and Sibanye have mined adjacent to each other is between 50 and 58 level. This area has already been partly re-watered to level 52 (on the Ezulwini side) and neither mine's plans include further mining within these areas.
It was requested that Sibanye also mention their effluent contribution to the surface water system.			Department of Mineral Resources (DMR)	10/04/2017	Meeting with the DMR	Sibanye's sewage is treated and discharged by a private contractor, to the Peter Wright dam. The latest monitoring reports have been included in Appendix C.
The DMR mentioned that the sediments downstream of the Ezulwini mining operations may promote illegal mining activities.			Department of Mineral Resources (DMR)	10/04/2017	Meeting with the DMR	Noted. Sibanye Gold to monitor the occurrence of illegal mining and develop measures to prevent such mining taking place.
The DMR reminded Sibanye of the DMR's duty to the public and requested that all monitoring and competence reports be submitted to the Head Office.			Department of Mineral Resources (DMR)	10/04/2017	Meeting with the DMR	Noted.
As the DMR anticipate significant impacts, they may request a full EIA process be followed, depending on the information submitted.			Department of Mineral Resources (DMR)	10/04/2017	Meeting with the DMR	A legal opinion letter was written to the DMR in this regard – see Appendix F.8.

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The FSE is not in principle opposed to the proposed cessation of pumping and associated closure of the underground workings of the Ezulwini operations by the end of 2017, and rewatering of the underground operations since the FSE recognises that the long-term pumping costs and responsibilities would be unsustainable and that mine closure approval would be extremely difficult to obtain, as pumping costs would need to be carried by a third party. Pumping and maintenance costs will fall away with the proposed closure of the Operations. Furthermore, all mines have the right to close provided the correct procedure is followed as stipulated in the MPRDA and other relevant acts ('closure entitlement"). Also, a non-operational mine cannot have an "in perpetuity" non-closure status. The FSE has noted the financial guarantees and insurance policy for the Applicant's closure liabilities (calculated at R128 765 079) and rehabilitation, which are listed as R79 401 000, R5 077000 and R44 287 079 respectively. The closure liabilities are therefore fully funded. The FSE have some issues of concern of concern, however. These issues may have been addressed in the BID and the Specialists' Reports. If we have overlooked it, we apologise and respectfully request the EAP to refer us to these Reports. The FSE's issues of concern are:	Ms	Mariette Liefferink	Federation for Sustainable Environment (FSE)	09/05/2017	Letter received via email	Noted.
Safety at down dip mine/s (in the case under consideration, South Deep Mine) may be compromised as a result of hydrological interconnections between mines. The decision cannot be considered in isolation. The implication of a single mining operation's decision to cease operations, taken in isolation from its neighbouring mine/s, may consequently result in a risk that is transferred to the remaining mine/s in the region.	Ms	Mariette Liefferink	Federation for Sustainable Environment (FSE)	09/05/2017	Letter received via email	A comprehensive seismic analysis was presented in the updated version in section 3 of the SRK report entitled "Assessment of the water barrier pillar and the water plugs placed between Ezulwini Shaft and South Deep Shaft" and in section 3 of the SRK report entitled "Assessment of the water barrier pillar and the

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						positioning of future plugs between Cooke 3 and Ezulwini shafts." Refer to these reports for the responses regarding this section of the comments. The only area where both South Deep and Sibanye have mined adjacent to each other is between 50 and 58 level. This area has already been re-watered and neither mine's plans include further mining at the same levels. Despite the re-watering that has occurred, no flow has been reported between the mines. There are many NE –SW geological structures that cross the boundary pillar between Ezulwini and South Deep. These will be clamped by the intermediate principal stress within the barrier pillar, which is greater than 40 MPa. The structures have varied infill and gouge characteristics and some may be permeable. The high confining stress will reduce seepage rates, but will not eliminate seepage, if the structures are naturally permeable. Between Cooke3 and Ezulwini, the rock types in the vicinity or the water barrier pillar comprise the very competent impermeable quartzites and conglomerates of the middle Elsburg. The mining on both sides of the

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						Cooke 3 / Ezulwini boundary was done on a single reef horizon and no multiple reef mining was done in close vicinity to the boundary. The boundary pillar had been mined in two positions, reducing the water barrier pillar widths to 7 m and 13 m. An underground visit to the area where the pillar had been partially mined revealed that the pillar was in good condition with minor stress fracturing. In addition, falls of ground have occurred adjacent to the pillar. Several geological structures such as sub vertical joints and bedding planes were identified in the existing pillar. An elastic model to analyse boundary pillar stress found that the 7 m pillar was not subject to high stress. However, due to the size of the pillar and the geological structures intersecting the pillar, a decision was taken to prevent re-watering the stopes adjacent to the narrow pillar by placing two plugs on the Ezulwini side of the water barrier pillar and utilise a pillar in excess of 20 m in an alternative position. The alternative pillar was then assessed using average pillar stress and a strength factor. The results from this assessment established that

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						this pillar would be stable and no foundation failure, or seismic activity associated with this phenomenon, would be expected.
Conflicting expert opinions around the rate of recharge and time for interim (rewatering period) management issues.	Ms	Mariette Liefferink	Federation for Sustainable Environment (FSE)	09/05/2017	Letter received via email	The expected rate of rewatering corresponds with a study that was done by Rison Consulting in 1999. As far as we are aware there have not been any other studies of this nature in the Gemsbokfontein West compartment.
Conflicting expert opinions around the water quality.	Ms	Mariette Liefferink	Federation for Sustainable Environment (FSE)	09/05/2017	Letter received via email	Please see comment above. There have been other studies in other areas and it is important to note that the areas may differ geologically and can therefore not be compared.
Loss of the aquifer as a harvesting resource: impact on the communities which are utilising the discharged mine water.	Ms	Mariette Liefferink	Federation for Sustainable Environment (FSE)	09/05/2017	Letter received via email	This has been assessed in the socio-economic impact assessment (Appendix C). It is noted that the Gemsbokfontein West compartment will rewater, which will increase opportunities for agriculture.
Conflicting expert opinions around the point of discharge, i.e. mega-compartment scenario vs compartmentalised rise - based on assumptions, voids of most gold mines in the Far West Rand/West Rand Goldfield are interlinked through haulages, possible hydraulic linkages and breaches of compartmentalising dykes.	Ms	Mariette Liefferink	Federation for Sustainable Environment (FSE)	09/05/2017	Letter received via email	The mega-compartment issue deals with the dolomite compartments from Venterspost to the Boskop/Turffontein compartment. There are some conflicting opinions on how the water level will recover in that area, but it excludes the Gemsbokfontein West compartment. The latter compartment is isolated from the rest and will therefore act

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						differently.
Ensuring that rewatering occurs in such a manner that no burden/liability is placed on the community.	Ms	Mariette Liefferink	Federation for Sustainable Environment (FSE)	09/05/2017	Letter received via email	Groundwater quality impacts are not expected, but Sibanye will remain responsible if any mine related contamination is noticed.
Adoption of the "polluter pays" principle. Latent impacts may take decades, or even centuries, to manifest themselves.	Ms	Mariette Liefferink	Federation for Sustainable Environment (FSE)	09/05/2017	Letter received via email	Noted. Continuous monitoring should provide an indication of the realisation of latent impacts.
The FSE recommends that: The dewatering-related closure issues in the DMR's Regional Mine Closure Strategy for the Far West Rand Gold Fields be incorporated in the Closure Plan. (The aim of regional mine closure is to prevent or minimise adverse long-term socioeconomic and environmental impacts, and to create a self-sustaining natural ecosystem or alternate land use. A Regional Closure Strategy will therefore be based on an agreed set of objectives and specific standards for a region and promote the alignment of individual mine closure plans to reach these standards.)	Ms	Mariette Liefferink	Federation for Sustainable Environment (FSE)	09/05/2017	Letter received via email	We believe that the proposed closure of the underground workings is aligned to the Regional Mine Closure Strategy for the Far West Rand Gold Fields in terms of the applicable aspects which have been covered by the application (interconnection of mining compartments, Acid Rock Drainage and Mine Drainage, Salt loads, decanting of flooded mines, ground instability and radioactivity/ Uranium). When Sibanye undertakes the closure application for the entire Ezulwini Mine, this should be re-assessed in terms of all the closure activities.
The Constitution of the FWRDWA be amended to include the management of rewatering in a sustainable manner. (When the constitution of the FWRDWA was drafted, the issue of rewatering was never considered and therefore no clause was included. The Association does therefore not deal with issues concerning the rewatering of the dolomitic compartments unless changes are made to its constitution.)	Ms	Mariette Liefferink	Federation for Sustainable Environment (FSE)	09/05/2017	Letter received via email	Noted

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In the past, community complaints and claims were brought to the State Coordinating Technical Committee (SCTC), which ensured that their objections and suggestions were taken into consideration and claims on damage investigated. The SCTC is no longer operational and it is recommended that this function be reinstated or a similar function be initiated as a matter of urgency.	Ms	Mariette Liefferink	Federation for Sustainable Environment (FSE)	09/05/2017	Letter received via email	Noted
The need for a regulator governing development on dolomitic land.	Ms	Mariette Liefferink	Federation for Sustainable Environment (FSE)	09/05/2017	Letter received via email	The Council for Geoscience is responsible for assessing and approving development on dolomitic land.
Rewatering should be managed in such a way that no rewatering beyond the lowest level of dolomitic rock occurs in order to ensure dolomite integrity and land stability.	Ms	Mariette Liefferink	Federation for Sustainable Environment (FSE)	09/05/2017	Letter received via email	Noted, the water table will be returned to its original levels. The potential impact of rewatering on dolomitic stability was addressed and dolomitic stability will be monitored.
Coordination of rewatering of mine workings between interconnected mines and the development of a regional strategic water management plan towards closure as a key tool in managing long-term business risks and opportunities. The strategic water plan should include a long term monitoring program for both water quality and quantity.	Ms	Mariette Liefferink	Federation for Sustainable Environment (FSE)	09/05/2017	Letter received via email	Noted.
Sufficient resources should be allocated to develop and implement the post-closure water management plan (including adequate training, skills (staff trained in hydrology/monitoring/equipment use), appropriate tools (measuring equipment/pumps/storage facilities), funding for technologies.	Ms	Mariette Liefferink	Federation for Sustainable Environment (FSE)	09/05/2017	Letter received via email	Noted.
Understanding and taking into account future demographic trends, community expectations, climate change, industrial development, regional and national issues.	Ms	Mariette Liefferink	Federation for Sustainable Environment (FSE)	09/05/2017	Letter received via email	Noted. This is a function of the municipality in association with all the mines.
Establishment of sustainable post-mining land use options with surface water objectives in consultation with the relevant stakeholders. (We refer to Appendix 5 to the 2014 EIA Regulations, which includes	Ms	Mariette Liefferink	Federation for Sustainable Environment (FSE)	09/05/2017	Letter received via email	As this project's relevance is limited to the re-watering of the underground workings only, the Closure Plan is only a "partial"

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"closure objectives" (1(b)). This implies that before a decision is taken on which measures to implement for remediation and closure, the objectives that need to be achieved with the implementation of such measures must be established and agree upon. Such objectives would include, from a generic perspective, the following: 1. Immediate harm to human health and safety must be eliminated 2. Groundwater must be fit for current and future domestic and other uses consistent with agreed current and future land use 3. Surface water must be fit for current and future basic human needs and aquatic ecosystems requirements 4. Risk of harm to non-aquatic organisms (vegetation) must be eliminated 5. Soil (property) must be fit for use consistent with current and future land use It is impossible to determine if measures taken to remediate environmental impacts with the aim of achieving mine closure are in fact "reasonable measures" unless the future land use has been determined and objectives for remediation have been agreed upon. Since they are the ultimate recipients of potential, ongoing and historical pollution and the potential future land users, the requirements entail that interested and affected parties must be involved in the agreements regarding future land use of affected areas and thus in the decisions regarding the establishment of objectives for such future land use, as well as in discussing the alternatives for engineering interventions.)						Closure Plan and cannot account for the closure of the surface infrastructure which will remain in place and operational. As no information is available at this stage regarding the closure of the entire Ezulwini workings and associated closure objectives and final land use, we cannot comment on these aspects. We did however specify that a full Closure Plan be undertaken at the time of cessation of all Ezulwini's activities and that this plan follow the objectives and recommendations listed.
Adoption of a strategic approach, taking the true	Ms	Mariette	Federation for	09/05/2017	Letter received via	Noted. This is the function of

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value of water into account, provide business opportunities and risk protection (i.e. establishment of a water utility).		Liefferink	Sustainable Environment (FSE)		email	more than one role player. It is stipulated in the EMPr that Sibanye Gold must assist in business opportunities.
Extract from reports: *• Economic benefits (Ezulwini Mine)* *• The recovery of the groundwater levels in the Gemsbokfontein dolomite aquifer and the flow at the Gemsbokfontein Eye (within 7 years of termination of pumping, with full recovery in 15 years) and contribution to the flow of the Wonderfonteinspruit (up to 13Ml per day), which will have a positive impact on the water quality of the Wonderfonteinspruit.* The FSE does not have profundity in geohydrology, however, it is the FSE's modest opinion that when attempting to calculate the rate of rewatering, certain unknowns have to be kept in mind and further research is therefore needed to give a more accurate value for the rate of rewatering. For instance: significant groundwater leakage occurs through the compartmentalising dykes which could be enhanced by mining induced fracturing, by weathering of the dykes in the unsaturated conditions that prevailed during dewatering (i.e. adjacent to the karst) or leakage associated with other geological structures. The FSE respectfully requests whether the above-mentioned scenario/theory (mine piercings and leaking dykes) has been adequately investigated, namely that interconnections between the mine void as well as the breaching of the compartmentalising dykes may have resulted in the formation of a mega-compartment? It is the FSE's understanding that the mines have	Ms	Mariette Liefferink	Federation for Sustainable Environment (FSE)	09/05/2017	Letter received via email	All the concerns raised by FSE were considered. Any modelling exercise is reliant upon good quality data and proper monitoring boreholes were drilled to obtain such data during the rewatering process. Groundwater models are only a tool to better manage any geohydrological problem and must be updated with new data. This will be done throughout the rewatering process, using the data from the monitoring boreholes. Leakage through dykes into the Gemsbokfontein West compartment was taken into consideration. The issue of a mega-compartment is not applicable to the Gemsbokfontein West Compartment. There are many NE –SW geological structures that cross

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excavated through the compartmentalising dykes allowing for water to pass freely between compartments. Because of these pathways a particular compartment, in the case under consideration, the Gemsbokfontein Compartment will not be completely recharged and groundwater levels will not return to the pre-mining condition. If our understanding is correct there will be a synchronous water rise in all the compartments. The original springs ("eyes"), which have dried up due to dewatering, will remain dry and the lowest lying springs, i.e. at Turffontein, which was unaffected by dewatering up until now, will be the only springs that will flow/decant. The conceptual model by Hodgson et al (2001) suggests that some of the contaminated mine water may be mixed with recharging water by a U-tube-like flow. This will continually contaminate the dolomites with high salinity (AMD) water and the impact will be greatest in the Turffontein compartment where decant will occur. Because a regional scale geo-environmental model for the WR/FWR is lacking, we are of the modest opinion that no precise handle could be placed on the contamination load. However, some conceptual idea with respect to the total salt load generated can be assumed from the upper Wonderfontein Spruit where the Donaldson Dam discharges into the 1000mm Pipeline. The average flow for this pipeline is given as 16 400 m3/d. Thus a daily salt load of 10.7 tons is transported from the Upper Wonderfontein Spruit catchment into the FWR. We also refer to the method used by Scott (1995) on the East Rand. This method followed to estimate the expected worst quality waters. The fissure water from Doornfontein's						the boundary pillar between Ezulwini and South Deep. These will be clamped by the intermediate principal stress within the barrier pillar, which is greater than 40 MPa. The structures have varied infill and gouge characteristics and some may be permeable. The high confining stress will reduce seepage rates, but will not eliminate seepage, if the structures are naturally permeable. At present there is no water flowing in the 58 level access tunnels, but very minor seepage through the hanging wall was observed at the plug sites. The flow rate on 72 level, measured with a V-notch weir is typically 0.9 Ml/day. At this stage, the source of this water has not been confirmed. If one assumes that all the water reporting on 72 level is seeping through the barrier pillar, the flow at full rebound is then expected to be at the 8 ML/d pumping capacity of South Deep. South Deep is currently pumping 11 Mℓ/day, of which 2 Mℓ/day is fissure water (fissure water is expected to increase to 7 Mℓ/day, resulting in a total amount of 16 Mℓ/day to be pumped from South Deep). As per email correspondence with Mr Andre Marais of Gold Fields, South

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No. 3 Shaft was used as the worst expected water. The model predicts that the final water chemistry will not be excessively acidic due to reaction with the dolomites and other carbonate species. The model also assumes that oxygen will not be replenished when iron precipitates, thus the recharging water will be reducing which will limit pyrite oxidation. However, this modelling is an oversimplification of the true conditions as many of the reactions are rather slow and may never reach equilibrium (i.e. the neutralisation by dolomite is a slow process), kinetic modelling should rather be done. From the chemistry of the system it was shown that acid production and hence water degradation should stop after flooding of the mine openings. Thus the quality of water trapped in the system at completion of rewatering will become highly deteriorated. Further exchange will dilute the water and concentrations will decrease logarithmically. Hodgson et al., (2001) predicted long renewal times and loads through large-scale steady state pumping from the mines (Table 5.23). The long renewal times imply that an ongoing problem might exist. In reality, far less of the contaminated water will be flushed out of the system due to incomplete mixing and dead end mine voids. If the above-mentioned assumption is incorrect, the FSE respectfully requests a response. *Report extract:* • *Reduction in the salt/metal load discharged into the Kleinwes Rietspruit*						Deep can safely pump 16 Mℓ/day in the current situation, and with the installation of an additional column in the shaft, will be able to pump 38 Mℓ/day. As the Ezulwini mine floods, the flows across the water barrier pillar need to be monitored, and mitigation measures such as additional pumping capacity may need to be considered. Between Cooke3 and Ezulwini, the rock types in the vicinity or the water barrier pillar comprise the very competent impermeable quartzites and conglomerates of the middle Elsburg. The mining on both sides of the Cooke 3 / Ezulwini boundary was done on a single reef horizon and no multiple reef mining was done in close vicinity to the boundary. The boundary pillar had been mined in two positions, reducing the water barrier pillar widths to 7 m and 13 m. An underground visit to the area where the pillar had been partially mined revealed that the pillar was in good condition with minor stress fracturing. In addition, falls of ground have occurred adjacent to the pillar. Several geological structures such as sub vertical joints and bedding planes were identified in the existing pillar.

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						An elastic model to analyse boundary pillar stress found that the 7 m pillar was not subject to high stress. However, due to the size of the pillar and the geological structures intersecting the pillar, a decision was taken to prevent re-watering the stopes adjacent to the narrow pillar by placing two plugs on the Ezulwini side of the water barrier pillar and utilise a pillar in excess of 20 m in an alternative position. The alternative pillar was then assessed using average pillar stress and a strength factor. The results from this assessment established that this pillar would be stable and no foundation failure, or seismic activity associated with this phenomenon, would be expected. Method used by Scott (1995): This is applicable to the compartments west of the Gemsbokfontein West compartment. Oversimplification: Not applicable to the Gemsbokfontein West compartment.

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						Chemistry of the system: The water quality in the mine is expected to be of a poorer quality than dolomite water and we are in agreement with Scott's research. However, due to the hydrostatic pressure the mine water will be confined to the mine workings and will not flow up-gradient into the dolomite aquifer. Table 5.23 (Hodgson et al, 2001) shows that the Raleigh number is too small for any thermal convection to occur in these mines.
Report extract: • *The cessation of pumping will have a very high impact on the surface water quantity in terms of availability, in the Kleinwes Rietspruit and in terms of the availability of water in the catchment.* FSE comment: Water is an asset with social, environmental and economic value. The value of water and/or an aquifer is realised as considerable, being a renewable resource and the non-availability of water to downstream water users and the ecology is a reality with financial implications. The FSE noted that the pecuniary loss to farmers was assessed in the Socio-Economic Assessment, however, if our interpretation of the Socio-Economic Assessment is correct, the impact on the environment (ecology) has not been assessed. The socio-economic impact assessment should include an assessment of the opportunity costs, e.g. :	Ms	Mariette Liefferink	Federation for Sustainable Environment (FSE)	09/05/2017	Letter received via email	• The impact on the environment of the Kleinwes Rietspruit was assessed – see Appendix C of the BAR. The aquatic environment will, in time, recover to its pre-dewatering status, which has a number of positive impacts, such as seasonal inundation of certain wetlands. • It is believed that the socio-economic impact assessment adequately addressed the issues raised. • In terms of the socio-economic impacts, the EMPr specifies that Sibanye Gold must maintain involvement with

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• Understanding the value of the foregone opportunity; • The achievement of the desired aim/goal for the specific area; • Optimising of positive impacts; • Minimising of negative impacts; • Equitable distribution of impacts; and • The maintenance of ecological integrity and environmental quality. Applying the "opportunity cost" principle calls for a consideration of whether or not the proposed development will constitute the best use of the resources (i.e. the best practicable environmental option). Has this been adequately considered in the socio-economic impact assessment? *Report extract:* • *The cessation of pumping will have an impact on discharges to Bambanani Fruits and to South Deep Mine.* • *The existing 1 m pipeline will not be in the position handle additional flows at the Gemsbokfontein Eye.* • *It is expected that there will be a decline in the water quality immediately downstream of the Peter Wright Dam, that is, into the Kleinwes Rietspruit particularly with respect to uranium concentrations.* • *Water quality in the Kleinwes Rietspruit with respect to e.coli may deteriorate due to the significantly reduced dilution from the water currently being discharged from the mine.* • *Kleinwes Rietspruit: Change in the system from one that has been perennial in nature, with fast flowing water all year around, to a non-perennial system with more wetland characteristics.*						job opportunity initiatives, such as the Gold Alliance Partners initiative.

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• *The dilution effect from the water on the Peter Wright Dam will be removed and the impact will be negative in terms of concentration, but not load.* • *Possible increased turbidity, deposition of sediments and release of heavy metals and other particles within the Kleinwes Rietspruit.* • *Impact on aquatic ecology species.* • *Medium to high risk of large to very large size sinkholes occurring in certain zones of Simunye.* Hodgson et al, 2001 showed the WFS water to have high HCO3, Mg2+ and Ca2+ - typical of dolomitic waters. This high calcium and magnesium levels are characteristic of the dissolution of dolomite. Thus the chemistry shows that water is dissolving dolomite. The probability of dolomite dissolution and instability in post-mining times is high. Increased salinity will increase the water's ability to dissolve dolomite. Lowered pH of acid-mine drainage will also dissolve dolomite. If this water recharges the dolomites, significant dissolution of the dolomite could occur. If the water quality will be similar to that of the Blyvooruitzicht fissure where the rewatering rate was 60ML/day (an average between the dynamic records and the original eye flow), more than 6000 m^3 dolomite/year will dissolve. This will have two major implications: • Significant widening of preferred pathways causing greater overall transmissivity in the dolomites and greater storage volumes; • Possible stability problems should excessive karstification result. If the Gemsbokfontein West Compartment fully						We are of the opinion that it will take extensive time (millions of years) before any significant dissolution will occur. Uncontrollable inflow of water can potentially erode the already weathered material (wad), causing sinkholes. Proper surface water management and monitoring will reduce this risk. Fluid induced seismicity has occurred and will continue to occur, but the seismic hazard is not expected to increase significantly with increasing water pressure. The risk of

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rewaters, then water harvesting falls away as an option for ground stability reasons, also use of a percentage of the surface area for urbanisation; and it has an "in perpetuity" ramification as construction on rehabilitated ground movement sites should never be allowed. If the above-mentioned assumption is incorrect, the FSE respectfully requests a response. *Report extract:* • *Significant chance that seismic responses may occur due to mine re-watering.* • *Negative impact on Ezulwini Mine's employment (155 affected employees).* • *Potential loss of 310 related job opportunities (local farmers)*						damage to the plugs or failure of the water barrier is insignificant. Water harvesting should be undertaken in consultation with the DWS and in accordance with a groundwater management strategy. Future development should also be in accordance with the Council for Geoscience's guidelines.
I refer to the discussion with Mr Marius van Biljon regarding the theory that the mines have excavated through the compartmentalising dykes allowing for water to pass freely between compartments within the Far West Rand and Mr van Biljon's expert opinion that the Gemsbokspruit Compartment is not connected to the other Compartments within the Far West Rand. The FSE is not an expert in these matters hence has to borrow from other experts in order to ripen its judgment. Pursuant to my discussion with Mr van Biljon and the presentation at the Rietspruit Catchment Management Forum on the 9th of May 2017, I revisited the DMR's Regional Mine Closure Strategy for the Far West Rand goldfields, in particular the sections discussing the Gemsbokspruit Compartment. The FSE's objective is not to contest or dissent from the findings of Mr van Biljon or to oppose the Project but rather to have clearness of judgment regarding the possible impacts of the closure of the Ezuwini Shaft and the rewatering of the Gemsbokfontein	Ms	Mariette Liefferink	Federation for Sustainable Environment (FSE)	11/05/2017	Letter received via email	There are most definitely no underground connections between Kloof and Ezulwini (or South Deep or any of the Cooke mines or Harmony's Doornkop mine). These mines can therefore be treated as separate entities. There is a possibility of seepage through geological structures. These volumes are expected to be minimal and not of concern.

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<tr><td>West sub compartment in order to ensure that there are sufficient management and mitigation measures in place.
According to the DMR's Regional Mine Closure Strategy (RMCS) for the Far West Rand (FWR) goldfields, based on the geohydrological considerations, the Far West Rand Goldfield has been subdivided into three sub-units. The subdivisions for the Far West Rand Goldfield are, according to the RMCS for the FWR goldfields:
1. The mines below the Gemsbokfontein Compartment of the Far West Rand (South Deep, Ezulwini (REL 4 shaft) Cooke and Doornkop section) as well as surface gold mining at Pamodzi (FWR1);
2. The mines below the Venterspost Compartment of the Far West Rand (Venterspost, Libanon, Leeudoorn and Kloof) (FWR2);
3. The mines below the Bank, Oberholzer and Turffontein Compartments of the Far West Rand (Doornfontein, Blyvooruitzicht, Driefontein Cons., Deelkraal and Elandsrand and Western DeepLevels (Mponeng, Tau Tona, Savuka) (FWR3).

With reference to the above-mentioned findings, I think that we are in agreement.
The following table is included in the RMCS for the FWR. I subjoin it hereunder and highlight the sections which have relevance to my discussion with Mr van Biljon.

TABLE 3.1: Features of the Far West Rand Goldfield 1
<table><tr><td>Definition</td><td>The mines below the Gemsbokfontein Compartment of the Far West Rand.</td></tr></table></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
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Mines included	Operating Mines South Deep, Randfontein Estate Gold Mine: Doornkop Section, Randfontein Operations: Cooke Section (1, 2 and 3), Ezulweni (REL 4 shaft), Pamodzi gold.						
	Non-operating mines None						
	Abandoned mines None						
Surface-water catchments	(C22) and (C23)						
Potential impacts	Interconnection of mining basins, acid rock drainage and mine drainage, large salt loads, decanting of flooded mines, Interaction with aquifers, particularly dolomitic aquifers, physical instability – mine subsidence and induced sinkhole formation in dolomitic areas, physical hazards due to abandoned shafts, dust pollution, land-use conflicts with growing urban centres, radioactivity.						

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Interactions with other regions/mines	Groundwater • Plugs have been installed between Cooke 3 and Ezulwini/REL 4 shaft. This also applies to Ezulwini/REL 4 shaft and South Deep; • Hydraulic connections between adjacent mine voids are possible even though the mined out areas of the two mines do not touch; • Interconnections between Kloof Section and Doornkop Section; • Possibility of mining at South Deep, with access from Kloof mine in FWR 2 area.						

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	Surface water • Impacts on Tertiary Catchment C23 (Wonderfontein Spruit via the pipeline) together with FWR 2 and 3; • Impacts on Tertiary Catchment C22 together with a portion of the Central Rand Goldfield; • The West Rand Goldfield impacts on Tertiary Catchment C23, upstream of the FWR 1.						
	Airborne Impacts • Windblown dust from the regional closure area is likely to impact on the adjacent Central Rand, FWR 2 and 3 and vice versa.						
Municipal/ administrative areas	Westonaria, Randfontein, Johannesburg Metro.						
The FSE respectfully requests Mr van Biljon to kindly elucidate this perceived anomaly, namely that there are, according to the RMCS for the FWR, interconnections between the Kloof Section and the Ezulwini Mine as well as some surface water impacts as a result of interactions with other regions, e.g. the Central Rand Goldfield. I think that we are in agreement that the rewatering will impact on the Wonderfonteinspruit which flows within the FWR2							The fault loss on the West Rand fault, in which no mining has occurred, forms a barrier between Kloof and all adjacent mines to the east.

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and 3.						
With reference to the recharge rate for the Gemsbokfontein compartment, it appears that there are also anomalies regarding the calculation due to the complex flow characteristics of this compartment, including significant recirculation of water and leakage through several of the dykes (Bredenkamp, 1993 and Hodgson et al, 2001). The subjoined table, borrowed from the RMCS for the FWR, illustrates these anomalies. Compart-ment / Fleisher (1981) / Wolme-rans (1984) / Brede nkamp (1993) / Enslin & Kriel (1967) / Foster (1989) Recharge % / Recharge % / Recharge % / Recharge % / Recharge % Turffontein: 5.6 Oberholzer: 18.3 / 3.6 / 12.9 Bank: 24 / 16.3 / 5.8 / 27.3 Venterspost: 27 / 20 / 8.5 / 54.6 Gemsbokfo n-tein: 12.8 / 5.3 / 27 / 7.5 Zuurbekom: 16.8 / 15 / 15.8 / 13 The FSE respectfully requests whether these anomalies were considered in the determination of the rewatering time period as well as the anticipated volumes which will flow from the Gemsbokfontein "eye"? Hodgson e.g. estimates that the time to rewater the dolomites in the Gemsbokfontein compartment will be 54.2 years. With reference to the rehabilitation of the Peter Wright Dam and the wetlands downstream of the Dam, the FSE comments as follows: The WRC Report No 1214/1/06, titled "An Assessment of Sources, Pathways, Mechanisms and Risks of Current and Potential Future Pollution of Water and Sediments in Gold-Mining Areas of the Wonderfonteinspruit Catchment" found that	Ms	Mariette Liefferink	Federation for Sustainable Environment (FSE)	11/05/2017	Letter received via email	During recent years a more detailed groundwater balance was developed and recharge estimates improved. Although the recharge rates in this table varies significantly we are confident that we understand the mechanisms better than was the case in 1993. With regards to the estimated 54 year recovery in the Gemsbokfontein compartment, the following: • Hodgson et al, by their own admission, indicated that this was a high level assessment and that detailed studies are required. We did such a detailed study. • Hodgson et al considered the entire area as part of the Gemsbokfontein compartment and not specifically the Gemsbokfontein West compartment. • In their calculations they only used the historical flow at the eye (8.9 Ml/d) to estimate the recovery time. This volume is indicative of steady state conditions, prior to mining and urbanisation, which changed the recharge to the compartment. In the

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"Radionuclides are concentrated in sediments downstream of their sources. Sequential extractions showed that these radionuclides are distributed in multiple phases within the sediments and that they may be remobilised by environmentally plausible chemical processes." The Report titled "Wonderfonteinspruit Catchment Area: Remediation Action Plan" (2009) (Department of Water Affairs and Forestry and the National Nuclear Regulator) refers to the potential for rapid remobilisation of metals into the water column during remediation actions. The rehabilitation of the Peter Wright Dam and the wetlands may result in the mobilisation of metals including uranium. This may pose risks to the health of people living in the catchment. The FSE recommends that the sediment as well as the water pathway be considered, as well as the risks due to the chemical toxicity of U and not only the radioactivity. The FSE furthermore recommends that the possible exposure of the communities downstream of the Peter Wright Dam be quantified. This includes, inter alia, the indication of potential U-sources as well as features crucial for understanding surface and underground pathways of water borne U-transport and last but not least the distribution of people (as potential receptors) within the catchment (e.g. updated maps of rapidly growing informal settlements). In addition to the measurement of U238 levels in soil and sediment (Bq/kg) and water (Bq/l), we also recommend measurements for R226 as well and the radiation dosages [mSv/a]. For the approach to the risk assessment we refer to Prof Frank Winde's recommendations in the above-mentioned Report. It is recommended that the risk assessment approach should be determined by two						current dewatered state the recharge is in fact in the order of 40 Ml/day and not 8.9 Ml/day. By applying the correct recharge rate to their volumes the recovery time reduces to 25 years, which compares well to our estimates of 21 years. (we estimated that the eye will start flowing after 6.5 years, but that it will take a further 15 years to reach steady state flow conditions again). With regards to the rehabilitation of the Peter Wright Dam and the wetlands downstream of the dam, the EMPr stipulated that water quality monitoring, aquatic biomonitoring, sediment quality and erosion monitoring must continue and that mitigatory measures must be developed should negative impacts be identified. It is further noted that the wetland upstream of the Peter Wright Dam will be remediated following a directive from the DWS. The expected uranium level at the Gemsbokfontein Eye is 0.03 mg/l. This is in line with the SANS 241 Drinking Water

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major components: (I) The degree of radioactive pollution in a certain medium ('contaminant level') and (II) The probability of members of the general public being exposed to such media ('exposure probability' and 'accessibility'). Lastly, care must be also be taken to manage the wetland during the rehabilitation. The system needs to be kept moist. If the sediments dry out, the resulting oxidation can lead to extensive remobilisation of previously adsorbed solutes, particularly the metals that the system is designed for to capture.						Standard. The radioactivity associated with the uranium should therefore not pose a risk to human health. However, it is recommended that the total alpha and beta radioactivity levels be monitored in the dolomites up until 3 years after the Eye has started flowing to ensure that the water does not pose a radioactivity risk. Further, it is highly unlikely that the deep mine water will mix with the dolomitic water due to stratification.
The FSE is not in principle opposed to the proposed cessation of pumping and associated closure of the underground workings of the Ezulwini operations by the end of 2017, and rewatering of the underground operations since the FSE recognises that the long-term pumping costs and responsibilities would be unsustainable and that mine closure approval would be extremely difficult to obtain, as pumping costs would need to be carried by a third party. Pumping and maintenance costs will fall away with the proposed closure of the Operations. Furthermore, all mines have the right to close provided the correct procedure is followed as stipulated in the MPRDA and other relevant acts ('closure entitlement"). Also, a non-operational mine cannot have an "in perpetuity" non-closure status. The FSE has noted the financial guarantees and insurance policy for the Applicant's closure liabilities	Ms	Mariette Liefferink	Federation for Sustainable Environment (FSE)	09/05/2017	Rietspruit Forum Meeting	Noted. Mine piercings and integrity of dykes were taken into consideration in the groundwater model. The u-tube effect, as per Hodgson's study, is applicable to the western compartments (Venterspost to Turffontein) and is not present in the Gemsbokfontein West compartment.

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(calculated at R128 765 079) and rehabilitation, which are listed as R79 401 000, R5 077000 and R44 287 079 respectively. The closure liabilities are therefore fully funded. The FSE does not have profundity in geohydrology, however, it is the FSE's modest opinion that when attempting to calculate the rate of rewatering, certain unknowns have to be kept in mind and further research is therefore needed to give a more accurate value for the rate of rewatering. For instance: significant groundwater leakage occurs through the compartmentalising dykes which could be enhanced by mining induced fracturing, by weathering of the dykes in the unsaturated conditions that prevailed during dewatering (i.e. adjacent to the karst) or leakage associated with other geological structures. The FSE respectfully requests whether the above-mentioned scenario/theory (mine piercings and leaking dykes) has been adequately investigated, namely that interconnections between the mine void as well as the breaching of the compartmentalising dykes may have resulted in the formation of a mega-compartment? It is the FSE's understanding that the mines have excavated through the compartmentalising dykes allowing for water to pass freely between compartments. Because of these pathways a particular compartment, in the case under consideration, the Gemsbokfontein Compartment will not be completely recharged and groundwater levels will not return to the pre-mining condition. If our understanding is correct there will be a synchronous water rise in all the compartments. The original springs ("eyes"), which have dried up due to						

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dewatering, will remain dry and the lowest lying springs, i.e. at Turffontein, which was unaffected by dewatering up until now, will be the only springs that will flow/decant. The conceptual model by Hodgson et al (2001) suggests that some of the contaminated mine water may be mixed with recharging water by a U-tube-like flow. This will continually contaminate the dolomites with high salinity (AMD) water and the impact will be greatest in the Turffontein compartment where decant will occur. Because a regional scale geo-environmental model for the WR/FWR is lacking, we are of the modest opinion that no precise handle could be placed on the contamination load. The FSE recommended that: 1. The dewatering-related closure issues in the DMR's Regional Mine Closure Strategy for the Far West Rand Gold Fields be incorporated in the Closure Plan. 2. The Constitution of the FWRDWA be amended to include the management of rewatering in a sustainable manner. 3. In the past, community complaints and claims were brought to the State Coordinating Technical Committee (SCTC), which ensured that their objections and suggestions were taken into consideration and claims on damage investigated. The SCTC is no longer operational and it is recommended that this function be reinstated or a similar function be initiated as a matter of urgency. 4. The need for a regulator governing development on dolomitic land since according to the BID medium to high risk of large to very large size sinkholes may occur in certain zones of Simunye. 5. The FSE noted that the pecuniary loss to						

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farmers was assessed in the Socio-Economic Assessment, however, if our interpretation of the Socio-Economic Assessment is correct, the impact on the environment (ecology) has not been assessed.						
Has there been objections against the proposed project during the announcement phase?	Dr	Henk Coetzee	Council for Geoscience (CGS)	16 May 2017	Meeting at the CGS, Pretoria	Yes, the comments received are all included in this document.
A report compiled by Ms Danelle van Tonder and Dr Bisrat Yibas author on the conditions of the plugs between South Deep and Ezulwini is available and it is strongly advised that the report we reviewed. Mr Coetzee will forward a copy of the report to J&W and Sibanye.	Dr	Henk Coetzee	Council for Geoscience (CGS)	16 May 2017	Meeting at the CGS, Pretoria	Noted.
Are the groundwater levels, before the de-watering available?	Dr	Henk Coetzee	Council for Geoscience (CGS)	16 May 2017	Meeting at the CGS, Pretoria	The information before the 1990's is available, however there is a gap in the information.
Flow of water to Gemsbokfontein East compartment is a consideration.	Dr	Henk Coetzee	Council for Geoscience (CGS)	16 May 2017	Meeting at the CGS, Pretoria	Detailed information on the boreholes east of the Gemsbokfontein is available and monitoring is still frequently taking place there.
What is the pH of the water currently being pumped?	Dr	Henk Coetzee	Council for Geoscience (CGS)	16 May 2017	Meeting at the CGS, Pretoria	Water entering the mine is of good quality and as it percolates through the mine, the quality deteriorates. The water is treated below ground if required and is released at a pH of 7. It is expected that if pumping is stopped, the water of poor quality (since it has been exposed to the mine workings) will stay at the bottom of the mine pit, but that good quality water will be released through the system to the Gemsbokfontein Eye.
A predictive model is now being used in terms of the	Dr	Henk	Council for	16 May 2017	Meeting at the	Monitoring has already started

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proposed cessation of pumping and the future flow of the groundwater – will this model be kept updated with regular monitoring data? And how long will monitoring take place after the switching-off of the pumps?		Coetzee	Geoscience (CGS)		CGS, Pretoria	and the models are being updated with data as it becomes available. Monitoring is proposed for approximately 10 years after the re-watering process has started. The model will be calibrated with the modelling data annually.
In order to apply for the final closure of the mine, the monitoring information of the predictive models will be very information.	Dr	Henk Coetzee	Council for Geoscience (CGS)	16 May 2017	Meeting at the CGS, Pretoria	Noted and agreed. It is in the best interest for Ezulwini to monitor the groundwater in the area.
The preservation of information by an independent party is critically important for South Africa. The final documents and the Closure Plan of the mine should state clearly how information is kept and by whom. If information is not preserved, studies will have to be done over and valuable data and material will be lost.	Dr	Henk Coetzee	Council for Geoscience (CGS)	16 May 2017	Meeting at the CGS, Pretoria	Noted and agreed.
Is the Far West Rand Dolomitic Water Association (FWRDWA) up and running to deal with any future incidences, as in the past with the dewatering process?	Dr	Henk Coetzee	Council for Geoscience (CGS)	16 May 2017	Meeting at the CGS, Pretoria	The only member of the FWRDWA is Sibanye Gold – arrangements are underway to revive the association again. There has been liaison between Sibanye and the DMR and the matter has also been noted by the local authority. The risk for the formation of sinkholes will remain for 10 years after pumping has stopped. Monitoring will be in place for the risk period and beyond.
A concern is the integrity of the pillar which holds the plugs between the mines, especially in circumstances of seismic events. Mr Andre Keegan (University of Pretoria) has compiled a report about seismic events and his model will be very informative. It is suggested that his opinion is also sought.	Dr	Henk Coetzee	Council for Geoscience (CGS)	16 May 2017	Meeting at the CGS, Pretoria	The SRK specialist reports have been updated in this regard and is attached under Appendix C. "There are many NE –SW geological structures that cross the boundary pillar [between

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						Ezulwini and South Deep]. These will be clamped by the intermediate principal stress within the barrier pillar, which is greater than 40 MPa. The structures have varied infill and gouge characteristics and some may be permeable. The high confining stress will reduce seepage rates, but will not eliminate seepage, if the structures are naturally permeable. At present there is no water flowing in the 58 level access tunnels, but very minor seepage through the hangingwall was observed at the plug sites. The flow rate on 72 level, measured with a V-notch weir is typically 0.9 Ml/day. At this stage, the source of this water has not been confirmed. If one assumes that all the water reporting on 72 level is seeping through the barrier pillar, the flow at full rebound is then expected to be at the 8 ML/d pumping capacity of South Deep. South Deep is currently pumping 11 Mℓ/day, of which 2 Mℓ/day is fissure water (fissure water is expected to increase to 7 Mℓ/day, resulting in a total amount of 16 Mℓ/day to be pumped from South Deep). As per email

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						correspondence with Mr Andre Marais of Gold Fields, South Deep can safely pump 16 Mℓ/day in the current situation, and with the installation of an additional column in the shaft, will be able to pump 38 Mℓ/day. As the Ezulwini mine floods, the flows across the water barrier pillar need to be monitored, and mitigation measures such as additional pumping capacity may need to be considered." "Between Cooke3 and Ezulwini, the rock types in the vicinity or the water barrier pillar comprise the very competent impermeable quartzites and conglomerates of the middle Elsburg. The mining on both sides of the Cooke 3 / Ezulwini boundary was done on a single reef horizon and no multiple reef mining was done in close vicinity to the boundary. The boundary pillar had been mined in two positions, reducing the water barrier pillar widths to 7 m and 13 m. An underground visit to the area where the pillar had been partially mined revealed that the pillar was in good condition with minor stress fracturing. In addition, falls of ground have occurred adjacent to the pillar. Several geological structures such as sub vertical joints and

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						bedding planes were identified in the existing pillar. An elastic model to analyse boundary pillar stress found that the 7 m pillar was not subject to high stress. However, due to the size of the pillar and the geological structures intersecting the pillar, a decision was taken to prevent re-watering the stopes adjacent to the narrow pillar by placing two plugs on the Ezulwini side of the water barrier pillar and utilise a pillar in excess of 20 m in an alternative position. The alternative pillar was then assessed using average pillar stress and a strength factor. The results from this assessment established that this pillar would be stable and no foundation failure, or seismic activity associated with this phenomenon, would be expected."
Concerned about differential stress – water built-up on one side of a pillar and not on the other – will that lead to challenges?	Dr	Henk Coetzee	Council for Geoscience (CGS)	16 May 2017	Meeting at the CGS, Pretoria	SRK has considered this in the updated specialist reports (Appendix C).
Does the pipeline to the Wonderfonteinspruit have the necessary capacity?	Dr	Henk Coetzee	Council for Geoscience (CGS)	16 May 2017	Meeting at the CGS, Pretoria	The pipeline was designed with a capacity of 120 Ml, however it is currently operating at a capacity of 100 Ml so there is a risk of overflow into the Wonderfonteinspruit if the capacity is exceeded. However, this overflow water will be lost to sinkholes, which will report to

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						Sibanye Gold's Kloof operations.
Is 3-D modelling available for the monitoring of seismicity?	Dr	Henk Coetzee	Council for Geoscience (CGS)	16 May 2017	Meeting at the CGS, Pretoria	This option will be suggested and Sibanye will investigate the possibility thereof.
I refer to the Closure of Ezulweni Shaft's Background Information Document (attached). As you may recall, I, on behalf of the FSE, have submitted our final comments. May I, however, kindly request to augment our final comments? This pertains to the subjoined and extracted section of the attached BID. *"Environmental Authorisation to proceed with the proposed cessation of pumping and associated closure of the underground workings of Sibanye Gold's Ezulwini Operations. A Basic Assessment (BA) process in terms of the Environmental Impact Assessment (EIA) regulations of the National Environmental Management Act 107 of 1998 (NEMA) is being followed for this application. This process includes the submission of a Basic Assessment Report, Closure Plan and an EMPr in terms of the NEMA and the 2014 EIA Regulations.* *The following activities will be included in the application for authorisation from the Department of Mineral Resources (DMR) in terms of Listing Notice 1 of the 2014 EIA regulations:…* *…The decommissioning of any activity requiring -* *i. a closure certificate in terms of section 43 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002); …"* While we are in agreement with Jones and Wagner's	Ms	Mariette Liefferink	Federation for Sustainable Environment (FSE)	17/05/2017	Email correspondence	The FSE is correct in pointing out that sections 24P, 24S, 24R and 28 of NEMA and Appendix 5 of the EIA Regulations are applicable to the current closure application and these have been taken into account and complied with. However, it is incorrect to state that they "supplant" section 43 of the MPRDA. Section 43 of the MPRDA is still in effect and EMC is currently duty bound to comply with section 43 of the MPRDA as well as the provisions from NEMA that you have cited. The Closure Plan that has been prepared in accordance with the NEMA provisions and Appendix 5 of the EIA Regulations will be used in support of the formal closure application that is still required to be submitted in terms of section 43 of the MPRDA. However, you will note that NEMA does not provide a mechanism to apply for a "closure certificate". This is provided for in section 43 of the MPRDA and the NEMA and the MPRDA operate in tandem in this regard, in a similar way to the need for a mining right in

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statement that it is necessary to include the 2014 EA Regulations in the application for authorisation from the DMR, is our understanding that the new sections in NEMA S24P, s28(6), s24R and 24S and the EIA Regulations of 2014 (APPENDIX 5) supplant section 43 of the MPRDA. The abovementioned statement namely that "*the decommissioning of any activity requiring a closure certificate in terms of section 43 of the MPRDA"* is therefore, according to our understanding, incorrect.						terms of the MPRDA as well as an environmental authorisation in terms of NEMA prior to the commencement of mining. Also note that the provisions of NEMA itself contemplate and require the above approach. Section 24R of NEMA on Mine Closure specifically refers to the issuing of a closure certificate….in terms of the MPRDA. Furthermore, a trigger for the applicability of Activity 22 of Listing Notice 1 of the 2014 EIA regulations is the need for a closure certificate in terms of section 43 of the MPRDA. The DMR also consider other factors in the course of the section 43 closure certificate application. For example, this is where the input of the Chief Inspector is provided on Health and Safety issues. We are therefore certain that an application in terms of section 43 of the MPRDA is required in addition to the NEMA processes and we do hope that this response serves to clarify the issue for the FSE.
Waterpan Golf Club is a very small golf club in terms of total number of members, but is a very active club. The club has 149 members only, of whom a large number (31) are working on the mines. The club has up to now succeeded to maintain the golf course in a good condition, taken that the club is privately	Mr	Dirk vd Westhuizen and Cassie Pelzer	Waterpan Golf Club	18/05/2017	Comment Sheet via email	Sibanye will engage with the golf course to understand their concerns.

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managed with funds generated via annual membership fees and green fees paid by players. The golf course furthermore provides permanent and temporary work to 22 people and although it is a small number, the impact on families is a lot bigger than merely the 22 people working on the golf course. We all know Westonaria and more specific Bekkersdal and Simunye have an unemployment rate of nearly 70% and jobs are hard to find. The closure of the underground operations at Ezulwini on itself would not have a major impact on the golf course and it's future, but rather the cessation of the pumping of the water that would not only have a major impact on the golf course, but would definitely lead to the closure of the golf course. The water that is pumped out from underground in the mine, is the only source of water that Waterpan Golf Course has always had, as this comes from the time that the mine was not only the land owner but also maintained the golf course and provided the water to the golf course. It was thus never required to have alternative water sources for the golf course. The planned closure of the underground operations and the cessation of the pumping of water at Ezulwini would have a major impact on the lives of the workers on the golf course as they would all lose their only source of income and with that their support of their families. These workers are different from those that worked at Ezulwini, as a majority of the Ezulwini workers were placed at other mines. The workers on the golf course have been working here for many years and as a result thereof have no other skills developed that they could offer or find work in their area of residence. Golf courses are struggling financially and employment is hard to come by and once laid-off they would not easily find						

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other employ. It is not only the workers that would be negatively affected by the closure of the golf course, but also on the community as a whole, including neighbouring communities such as Bekkersdal, Simunye, Westonaria, Randfontein, Carletonville, Lenasia and Eldorado Park, as a large percentage of the members of the golf club are from these areas. Although Waterpan Golf Club understands that the decision to close the mine and stop the pumping of water is a financially-based decision, the club is of the opinion that Sibanye could assist the club financially and also to investigate whether there is no other water source that the golf course could "tap into" to ensure the future existence of the golf course. In this regard there are two possibilities: (i) Sibanye assist financially for the drilling of a borehole(s) close to the location of the golf course and in an area where the water table is not deep below surface (we refer to the maps presented at the Public Participation meeting in Jachtfontein and once strong enough borehole-water is found to assist with the acquisition and installing of a pump and pipes from the borehole to the golf course; (ii) The current above ground activities do not form part of the planned closure and as such the existing sewerage plant would continue to operate. This is another option to be investigated to link the current pipe line from the mine to the golf course, to the sewerage works to provide water to the golf course especially for irrigation purposes.						
It is Gold Fields' understanding from the CBAR that Sibanye is seeking Environmental Authorisation ("EA") for the "decommissioning of the underground workings of Ezulweni by termination of pumping operations". Whilst Gold Fields is not opposed to the	Ms	Jana Strydom	Vice President: Legal and Compliance South Africa Operations: South	22/05/2017	Letter via email correspondence	Noted.

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decommissioning of the Ezulweni underground workings it cannot support the proposed termination of pumping as a closure strategy and overall closure objective for the Proposed Activity.			Deep Joint Venture			
Gold Fields will demonstrate in its comments that the CBAR, specialist studies and regulatory process undertaken by J&W to date have amongst others things, failed to assess alternative strategies and the potential environmental and health and safety consequences of the current and proposed closure strategy.	Ms	Jana Strydom	Vice President: Legal and Compliance South Africa Operations: South Deep Joint Venture	22/05/2017	Letter via email correspondence	See Appendix H.3 of the CBAR where the alternatives considered by Sibanye in the pre-feasibility and feasibility stages of the project are discussed. See sections 3j, 3k and 3p of the revised CBAR as well as 1d)iv, 1e and 1f of the EMPr where the potential risks/consequences of the proposed strategy for South Deep have been considered and assessed as part of the basic assessment process.
The National Environmental Management Act Regulations ("the NEMA Regulations"), specifically GNR 982 obliges J&W to undertake an impact and risk assessment inclusive of cumulative impacts, determining the risk of impact of the Proposed Activity, amongst other attributes on the economic and social attributes. The impact upon the wellbeing of Gold Fields' staff in respect of their safety as well as the potential destruction of the Gold Fields' resource, subsequent to plug and pillar failure are in Gold Fields' opinion social and economic cumulative impacts which respectively warrant rigorous investigation. These impacts have not been identified, nor investigated, by J&W.	Ms	Jana Strydom	Vice President: Legal and Compliance South Africa Operations: South Deep Joint Venture	22/05/2017	Letter via email correspondence	See sections 3j, 3k and 3p of the revised CBAR as well as 1d)iv, 1e and 1f where the potential risks/consequences of the proposed strategy for South Deep have been considered and assessed as part of the basic assessment process.
South Deep trusts that J&W will take sincere consideration of its comments and that the Final Basic Assessment Report ("FBAR") will provide the public and stakeholders with information necessary to allow them to reach an informed view on the Proposed Activity, and as such allow rigorous	Ms	Jana Strydom	Vice President: Legal and Compliance South Africa Operations: South Deep Joint Venture	22/05/2017	Letter via email correspondence	All of South Deep's comments have been carefully considered by J&W and the specialists as will be noted from the detailed responses provided below and in response to the table of

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consultation around a decision which will have significant environmental, and health and safety implications.						comments provided by South Deep, attached to this report as Appendix F9.
South Deep has submitted the comments included in this Comments and Responses Report and an additional Annexure which is appended to this report. **The additional South Deep comments, as well as responses, can be found in Appendix F9.**						
The CBAR displays, amongst others, the following key shortcomings: 1. Incomplete and inconclusive assessment of Barrier Pillar and Plug Stability 2. Uncertainty with regards to the long-term stability of the plugs 3. Impact on the re-establishment of the groundwater surface in the dolomitic layer 4. Failure to assess alternatives as prescribed 5. Document inconsistencies 6. Incomplete Impact Assessment 7. Adequate closure process not being followed 8. Incorrect risk assumptions and methodology 9. Regulatory omissions, including failure to integrate processes, failure to comply with regulatory requirements and failure to make application for parallel authorisations.						All of these issues or perceived "shortcomings" have been responded to in the more detailed comments below. The responses clearly show that all of these issues have been sufficiently addressed or assessed in the CBAR.
The nature and extent of these apparent omissions are detailed under the various headings below. For ease of reference, we have divided comments under the following headings: A. Key Technical Comments 1. Barrier Pillar and Plug Stability 2. Alternatives not considered 3. Inconsistencies in documentation and incomplete impact assessment B. Application and Integration Omissions 1. Radiation 2. Wonderfonteinspruit Resource Impacts and Licencing 3. Kleinwes Rietspruit Resource Impacts and						All of these issues or perceived "shortcomings" have been responded to in the more detailed comments below. The responses clearly show that all of these issues have been sufficiently addressed or assessed in the CBAR.

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Licencing 4. Kleinwes Rietspruit Wetland Rehabilitation Licencing 5. Waste Management Licence and further radioactivity implications C. Other Regulatory and Procedural Omissions 1. DWS Best Practice Guidelines and Regional Strategy 2. Closure Objectives 3. Downstream Water Users 4. Public participation Please further note that all comments by South Deep must be addressed, and not only those listed in this summary of key concerns (see below).						
A. Key Technical Comments						
1. Barrier Pillar and Plug Stability 1.1 At comments 54 through 84 of Table 1 of Annexure A, key points are raised in respect of the current SRK study, historical reports and associated relevant appendices of the study undertaken to assess the stability of both the barrier pillar and plugs that form the protective system between the mines. The review by SRK is dated December 2016 and is titled "Review of water barrier pillars and the water plugs placed between Cooke 4 Shaft and South Deep Shaft". It is noted, however, that no new work was undertaken by Sibanye Gold or SRK to assess the current state of the pillars or plugs and as such the aim of the exercise was only to review historical studies and design work by SRK for the Placer Dome Western Areas JV (PDWA-JV). 1.2 This technical study should be viewed as one of the most important parts of the basic						The updated reports by SRK address these queries and comments. Please refer to Appendix C.

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assessment process as it will guide a decision on whether the protective systems in place will be stable following the cessation of pumping, and re-watering of the Gemsbokfontein West Sub-compartment. More importantly, this aspect needs to be known or quantified for the Life of Mine to prevent any major or catastrophic inrush of water into their workings. 1.3 Whilst evaluating the long-term stability of the water barrier pillar is listed as a scope item, evaluating or assessing the long term stability of the plugs is not listed or achieved as an aim of the study. Further, the numerical modelling reports or assessments to support the finding by SRK that both the barrier pillar and the plugs will be stable are not included nor attached as appendices. Thus, it cannot be ascertained how the conclusion is reached that the plugs and barrier pillar will be stable over time. Whilst the original work was undertaken for the PDWA-JV and these numerical models are already in the possession of South Deep, the modelling methodology, software used, limitations and results should also be included in this review report, or attached as an appendix for completeness. Further, , due to advancements in software capabilities to address the limitations of boundary element methods and Map3D's capabilities to approximate plastic simulations, the Map3D models constructed in 2000 to assess the stability of the barrier pillar should have been updated as a part of this assessment. 1.4 The most recent study referenced in this review was undertaken by Semane Consulting for South Deep in 2011. The						

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recommendations of the Semane report on the plugs, their stability and long-term monitoring requirements were reiterated by SRK. Whilst those observations and recommendations were relevant at the time of the study, the observations made in 2011 should not be considered to be indicative of the current conditions. 1.5 Furthermore, given that the work was carried out 14 years ago, it cannot be concluded that the plugs will perform as expected for their design life of 100 years based on mortar strength of 25MPa. Both time-dependent deterioration and the aggressivity of the water in contact with the plugs should have been considered. 1.6 The Ezulwini Partial Closure Geohydrological and Geotechnical Assessment at 4.8, in fact, casts doubt as to whether the pillar and plugs' integrity is beyond doubt, specifically when water induced seismicity is factored in the risk profile. This reservation further motivates the necessity to investigate the social and economic cumulative impacts of potential plug and pillar failure. In the draft report (November 2016), the statement was made that - "The conclusions drawn in the seismic study reveal additional work is required, however, the potential of the results of this additional work to an extent that will compromise the integrity of either the water barrier pillar or the installed plugs is considered to be unlikely." 1.7 In the report submitted as part of the CBAR, this statement was revised to read - "Overall the review concluded that the risk of pillar or plug failure is considered to be low and the						

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long-term longevity of both the water barrier pillar and the plugs has not been compromised. The pillar and plugs will provide the required protection if the Ezulwini Mine is re-watered and can further be mitigated with proper evacuation plans and ongoing monitoring." 1.8 The lack of motivation or support for the latter statement from the technical work information provided in the CBAR is highlighted in the technical comments in Annexure A. This in itself is cause for grave concern and on this basis alone, the Final BAR cannot be approved. 1.9 However, the net risk to South Deep Mine and the very lives of its employees is not limited to an assessment of the possibility of plug or pillar failure. The degree of consequence plays an equal, if not bigger part in this assessment of these attributes from a legal perspective. It is evident from the CBAR, that scant, if any, consideration had been given to the latter. In the extract above, the statement is made that "the pillar and plugs will provide the required protection if the Ezulwini Mine is re-watered and can further be mitigated with proper evacuation plans and ongoing monitoring". The assumption on the part of J&W that the consequences of flooding can be mitigated by evacuation procedures is repeated in the Closure Plan at 3.4. This assumption is problematic from at least two perspectives. Firstly, it is not possible to state both, that a "risk is low" and that the pillar and plugs "will provide the required protection" in the same breath. The latter is absolute, while the former is conditional or speculative. It is in						

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any event submitted that the actual risk of plug failure lacks substantial motivation in the CBAR report's (particularly in relation to water induced seismicity) and that the fundamental information regarding the very structure of the boundary pillar is in question, as highlighted in the technical comments. Secondly, the conclusion is drawn that evacuation is suitable mitigation in the event of plug or pillar failure. However, South Deep will not be able to evacuate its personnel. In fact, in a conceivable scenario of failure of a pipe in the plug, creating a 150mm hole which can easily expand within minutes to a 200mm and a 500mm hole, the flooding of South Deep mine will occur within as little as 23 minutes. Evacuation cannot occur in a mine shaft of this depth within that timeframe. While the report obliquely recognises that the 'degree of consequence' must be considered, it recommends a mitigation assumption for that element which is utterly ineffective. The evaluation of the consequential risk is therefore merely limited to the risk of failure, since the degree of consequence is evidently foreseeably catastrophic. It is plainly evident from the various comments in technical reports that the lack of assessments, corroborating data and unsupported assumptions that serious doubt may be cast on the likelihood that the plugs and barrier pillar will remain stable and perform as required under a full head. The CBAR therefore constitutes no more than unsupported speculation as to the risk to lives of South Deep' employees and its operations as a whole. 1.10 In the event that J&W requires further motivation for an assessment of these						

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cumulative impacts it is reminded that Section 2(2) of the Mine Health and Safety Act, 1996 ("MHSA") requires that Ezulwini must take reasonable steps to continuously prevent injuries, ill-health, loss of life or damage of any kind from occurring at or because of the mine. Section 5(2)(b) of the MHSA further requires Ezulwini to, as far as reasonably practicable, ensure that persons who are not employees, but who may be directly affected by the activities at the mine, are not exposed to any hazards to their health and safety. More specifically, GNR 93 in Government Gazette No. 17725 of 15 January 1997 as amended (Mine Health and Safety Regulations) provides at 10.2(1) that Ezulwini must take reasonable measures to ensure that no person is injured as a result of the failure of any dam wall, plug or barricade keeping back water underground. Regulation 10.2(3)(a) further states that Ezulwini must take reasonably practicable measures to prevent persons from being injured by the unintentional release of water and hydraulic pressure from any dam storing water underground. Under a full head, the pressure on certain plugs will be some five times higher than that of the largest dam wall in the world. This fact alone indicates that neither the possibility of plug or pillar failure, nor the consequences of such failure in whatever form may take place, and an understanding hereof cannot be left to speculation. 1.11 The nature of the technical comments submitted in Annexure A indicate that the CBAR and supporting documentation contain numerous unsupported assumptions and modelling inadequacies and that there is, amongst others, a defined likelihood that						

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fluid induced seismicity may cause damage / failure to either the boundary pillar, or any one of the installed plugs. Risks identified regarding potential flange failure are also noted in Annexure A.						
2. Alternatives not considered 2.1 The CBAR lacks a rational and motivated consideration of alternatives. A single alternative is stated in the Basic Assessment Report/EMPr, namely the cessation of dewatering. The report states that "No site alternatives nor technology alternatives exist for the project as the proposed activities are for the termination of existing underground operations via the cessation of pumping". 2.2 The above therefore implies that Sibanye invariably equates the termination of underground operations with the cessation of pumping. The Geohydrological report considers six re-watering alternatives. However no explanation as to the rationale behind the selection of these alternatives was provided. It is unclear from the report if a risk-based approach was applied and whether all aspects (environmental, safety, financial, etc.), were considered in selection of the re-watering alternatives. As such, the alternatives have not been developed beyond a concept level study. For any of the alternatives or solutions to be ready for implementation at the cessation of pumping, a feasibility stage study of the engineered solution is needed. 2.3 The failure to investigate other closure strategy alternatives for the termination of existing underground operations and subject						The revised CBAR has included additional information on the assessment of alternatives in Appendix H.3. The revised CBAR complies with all of the requirements which South Deep has referred to. The alternatives are based on the current pumping configuration in the Ezulwini shaft. Installation of additional pumping capacities was not considered. The alternatives considered relate to the status quo of the mine. Several re-watering alternatives were considered, see Section 4.6 of the Geohydrological report. Please also refer to Sibanye's report in Appendix H.3. Please

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those alternatives to a risk assessment is viewed by South Deep as a dereliction of legal obligations under the National Environmental Management Act, 1998 ("NEMA"). 2.4 The NEMA Regulations oblige J&W to identify alternatives considered, including activity alternatives. If no activity alternatives were investigated, the CBAR must then include a motivation for this exclusion. The motivation provided by J&W that "no site alternatives nor technology alternatives exist for the project as the proposed activities, are for the termination of existing underground operations via the cessation of pumping", highlights the very issue being raised by South Deep. No activity / closure strategy alternatives had been considered, nor is any motivation for this failure provided. The predetermined and fixed closure strategy that 'termination of underground operations would only be undertaken through the cessation of pumping', deprives the Authorities and Interested and Affected Parties of an opportunity to consider activity alternatives and provide inputs on a decision which materially affects their interests. As such, we are of the view that the Ezulwini closure strategy does not conform to the generally accepted principles of sustainable development and is questionable in terms of the Promotion of Administrative Justice Act 3 of 2000.						also refer to Section 3g of the FBAR for a motivation on alternatives considered. This is included in Section 3g) and 3h)ix) of the revised CBAR.
3. Inconsistencies in documentation and incomplete impact assessment 3.1 There are inconsistencies in the documents that have been presented. The size of the barrier pillar, the size of the pipeline that						J&W and the specialists have ensured that any such inconsistencies referred to by South Deep have been corrected or explained in the

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carries the water across the dolomitic compartment and the process descriptions are examples of inconsistencies in the documentation. 3.2 Not all impacts identified in the specialist studies have been carried through to the impact assessment document. As such, the impact assessment document is viewed as incomplete as not all impacts are seen to be addressed in this document. 3.3 Post mitigation ratings (a reduction in rating) are provided for some impacts even when no mitigation measures are presented. As indicated in Table 1 of Annexure A, certain impacts are seen as "positive" when they should be evaluated as "negative".						revised CBAR. The ecological opinion has been updated to include a risk assessment, which has been brought into the revised CBAR. Noted and changed in the case of water availability to downstream users as well as potential flooding of adjacent mines (Section 10, p 43 SEIA). Changes carried through to the BAR.
B. Application and Integration Omissions Regulation 7(3) and (4) of the GNR 982 of 4 December 2014 to the NEMA Regulations provide as follows: (3) Where an applicant submits an application for environmental authorisation in terms of these Regulations and an application for an authorisation, permit or licence in terms of a specific environmental management Act or any other legislation, the competent authority and the authority empowered under such specific environmental management Act or other legislation must manage the respective processes in a cooperative governance manner. (4) Where the processes prescribed in terms of these Regulations are used to inform applications in terms of other legislation, application processes must						From the start of the project when the Background Information Document (BID) was published it was clear that an integrated application process is being followed for the proposed decommissioning of the underground workings of Ezulwini. The EMPr and Closure Plan are incorporated in the CBAR and a Water Use Licence Amendment Application has also been prepared in parallel with the Basic Assessment process. These are the only applicable specific environmental management act licensing

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be aligned to run concurrently." Notwithstanding these requirements, the applicant not only failed to make all requisite applications pursuant to partial decommissioning and closure, but also failed to integrate those applications with the content of the CBAR as set out below.						requirements. The Closure Plan will be used in support of the application in terms of section 43 of the MPRDA, which will follow after the Closure Plan has been completed. The section 43 application will be submitted by EMC (Pty) Ltd. The applicant is in the process of making all of the necessary applications and the applications have been integrated and co-ordinated in accordance with the legal requirements.
1. Radiation 1.1 In addition to the integration requirements of Regulation 7 noted above, Section 24O(b) of the NEMA requires that when the Minister responsible for mineral resources considers an application for an environmental authorisation, the Minister must take into account all relevant factors, which may include "any pollution, environmental impacts or environmental degradation likely to be caused if the application is approved or refused". The Minister must also take into account measures that may be taken to protect the environment from harm as a result of the activity which is the subject of the application and to prevent, control, abate or mitigate any pollution, substantially detrimental environmental impacts or environmental degradation. 1.2 With respect to radiation risks and damage, the CBAR merely states that Ezulwini is required to adhere to the conditions of its						This comment is a reminder to the DMR of its statutory obligations when considering applications. J&W is confident that the competent authority is aware of this requirement. The expected uranium level at the Gemsbokfontein Eye is

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Certificate of Registration (CoR) issued in terms of section 22 of the National Nuclear Regulator Act 47 of 1999 (NNRA). Possible contamination exposure scenarios include public exposure by means of domestic or agricultural use of contaminated water from dolomitic aquifer and ingestion or external exposure due to seepage of water via boundary pillar or plugs etc. As such, the possible changes effected by the proposed closure activity clearly required assessment. However, there is no assessment in the CBAR regarding the proposed closure activity and the nuclear radiation risks. The CBAR is accordingly fundamentally flawed in this respect. 1.3 Beyond the assessment of the nuclear radiation risks, it is recommended that J&W consider the effect of Condition 1.2.2 of the CoR and from a statutory perspective, Section 5 of GNR 388 of 28 April 2006 to the NNRA how this may affect J&W' approach to the current BA process. The Condition states –"Details of any proposed modification to existing facilities or amendment of any procedure or construction of any facility, which may have an effect on the risk of nuclear damage and which had not been addressed by the hazard assessments identified in section 2.2 of this authorisation, together with a quantitative assessment of its impact on the risk of nuclear damage, shall be submitted to the NNR by the holder. Such proposals shall be approved by the NNR before being implemented." 1.4 The CBAR does not clarify how J&W has fulfilled its obligations in terms of the NEMA						0.03 mg/l (Section 4.7 of the geohydrological report in Appendix C). This is in line with the SANS 241 Drinking Water Standard. The radioactivity associated with the uranium should therefore not pose a risk to human health. However, it is recommended that the total alpha and beta radioactivity levels be monitored in the dolomites up until 3 years after the Eye has started flowing to ensure that the water does not pose a radioactivity risk. Further, it is highly unlikely that the deep mine water will mix with the dolomitic water due to stratification. There will not be any modifications to existing facilities or amendment of any procedure or construction of any facility, which may have an effect on the risk of nuclear damage. The CBAR has been submitted to the NNR for comment and no response has been received to date. Sibanye has complied with

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Regulation 7 in respect of Condition 1.2.2 and Section 5 of GNR 388. 1.5 It is evident therefore that contrary to the requirements of NEMA and the NEMA Regulations, that no attention had been paid to radioactivity risks, the statutory requirements of the NNRA or the requirements of the CoR which apply upon decommissioning.						Condition 1.2.2 of its Licence in so far as the proposed decommissioning of the underground workings is concerned by notifying the NNR formally. This does not constitute an application for an authorisation and there is no need for an integration of applications as is required in terms of regulation 7 of NEMA. The principles of decommissioning as envisaged and defined in GN R388 of the NNRA are not applicable to the intended closure of the underground workings. Decommissioning within the context of GNR 388 is defined in section 2 of GNR 388 to mean "*the administrative and technical actions taken to allow* ***the removal of all of the regulatory controls from a facility***" (bold and underlined text is our emphasis). Based on the above definition it is evident that there is no intention for Sibanye to decommission to the extent that it will result in the removal of all the regulatory controls for the Ezulwini operation. The CoR will remain in place and Sibanye will continue to comply with all obligations and conditions contained in the CoR. Even if the decommissioning of Ezulwini is to be regarded as

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						decommissioning as defined in section 2 of GNR 388, which we submit it is not, there is still no requirement in section 5 for Sibanye to simultaneously comply with the requirements thereof as there is no absolute obligation for the integration of processes. Accordingly, Sibanye can still, if necessary, take steps to comply with section 5 outside of the CBAR process.
2. Wonderfonteinspruit Resource Impacts and Licencing 2.1 South Deep is of the view that the proposed activity may trigger the necessity for either a Water Use Licence Application and/ or amendment of the current Ezulwni Water Use Licence and that such application should be run concurrently by J&W. 2.2 On p vii, second bullet, the following conclusions are reached. "The potential impact of the increased flows within the Wonderfonteinspruit will not have a negative effect on the aquatic communities. As it is already within a largely modified state (EC of D/E), the 14 % increase in water will not reduce the ecological category. However, that will only be the case if the predicted water quality was found to be correct. The exact impact of this will depend on what the water quality from the Gemsbokfontein Eye will be. Any negative impacts associated with the increased water quantity will be mitigated by the numerous impoundments within the Wonderfonteinspruit and the Mooi River						The application for the amendment of the Ezulwini WUL has been made public and the application has been run concurrently by J&W.

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further downstream." 2.3 From the above, it is evident that, at the very least, an impact on the flow regime of the Wonderfonteinspruit and downstream is expected. 2.4 Further on p vii, third bullet, the following is stated "Flow will occur at Gemsbokfontein Eye after approximately 7 years, which will then be piped 32 km westward and discharges into a canal system, which will then enter a series of dams in the Abe Bailey Nature Reserve. The increase in water volumes into these series of dams is not seen as a major impact on the terrestrial biodiversity. It is predicted that the increase in volume into these dams may further displace more transformed land to the east, with limited natural vegetation displacement." 2.5 Upon inevitable decant, the Eye becomes a water resource. The Wonderfontein Spruit is also a water resource. The commencement of flow from Gemsbokfontein Eye becomes inevitable as of the moment that pump stations are flooded. The decant will result in both the diversion of this new resource past its natural flow pattern as well as increased flow in Wonderfontein Spruit and/or other resources downstream. This diversion and creation of increased flow is accordingly an activity denoted in at least section 21(i), and possibly also section 21(c). It is apparent that within weeks of cessation of pumping, and due to the irreversibility of the consequential flooding thereafter, these water uses will become inevitable. It stands to reason that Ezulwini cannot initiate a sequence of events						The DWS does not require EMC to submit an application for section 21(c) or (i) water uses. J&W does not agree with the interpretation of the National Water Act that has been used by South Deep for this comment. The studies show that a WUL will not be necessary. However, if in 6 to 7 years time, when the decant of dolomitic water occurs, a WUL is required, then EMC will have

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that renders the Department of Water and Sanitation's discretion to grant or refuse a water use licence immaterial.						to obtain a WUL and/or treat or impound the discharge in order to comply with all applicable legal requirements.
3. Kleinwes Rietspruit Resource Impacts and Licencing 3.1 A direct consequence of the cessation of pumping is also noted throughout the CBAR and specialist reports to occur at the Kleinwes Rietspruit - "The cessation of pumping will have a very high impact on the surface water quantity in the Kleinwes Rietspruit in terms of the availability of water in the catchment. Due to pumping having taken place for the last 40 years, it is the surface water specialist's opinion that the system has re-baselined and thus the cessation of pumping will have a negative impact. However, this can be seen as returning the river system to be more in line with the naturalised streamflow (i.e. prior to the permitted discharge of mine water into these watercourses). "The main impact, when pumping ceases, will be on the hydrology driver of the downstream systems. The flow will be reduced in the dry season by as much as 99% immediately downstream of the dam and up to a 29% reduction 38 km downstream in the dry season for the Kleinwes Rietspruit. The decrease in flow will in all likelihood result in a change in the system from one that has been perennial in nature, with fast flowing water all year around, to a non-perennial system with more wetland characteristics" "…The change in hydrology will impact on all of the other wetland drivers: Geomorphology, Ecology and Water						The DWS does not require EMC to submit an application for section 21(c) or (i) water uses. J&W does not agree with the interpretation of the National Water Act that has been used by South Deep for this comment. The discharge of underground water was authorised through section 21(j) of the NWA in the Ezulwini WUL. As indicated, EMC has applied to the DWS for the amendment of the WUL in this regard and the DWS will take all of these impacts into account when considering the amendment application.

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Quality. Specifically, any tailings or contaminants present in the watercourses which are currently being held in situ by the Phragmites reed beds may be released further downstream if the wetland vegetation reduces in extent due to a lower water flow. This may lead to increased turbidity, deposition of sediments and release of heavy metals and other particles. The Kleinwes Rietspruit system changing to a non-perennial system as it was initially, can also potentially impact on aquatic ecology species by favouring those organisms that thrive in slow moving to stagnant water and negatively affecting the invasive species in the watercourses." "The artificial wetland upstream of the Peter Wright Dam is a large contributor of the uranium concentrations and uranium load in the Kleinwes Rietspruit. Once pumping ceases the dilution effect from the water will be removed and the impact will be negative in terms of concentration, but not load. The only way a positive impact, on the aquatic ecology, can be achieved is if the application submitted to the relevant authorities, to rehabilitate the wetland is approved and successfully implemented by Sibanye."						The Wetland Rehabilitation Project is a separate project being implemented by EMC. An application has been made to the DWS to remediate the wetland upstream of Peter Wright Dam. Approval is being awaited. A recommendation has been made that the Peter Wright Dam be maintained at a level so that it does not spill more than 1 in 50 years and if it does spill more frequently, the water must comply to the RQOs for the Kleinwes Rietspruit.
3.2 The Kleinwes Rietspruit is a water resource. This system has for 40 years been characterised by a certain flow and quality, and this characteristic is now set to change dramatically with enormous impacts both socio-economically but also from a direct environmental perspective. These impacts are not limited to the fact that water will not be available to users who have had access thereto for some 40 years, but it is evident that the reduced flow will have significant						We take cognisance of this new baseline, but there is no legal requirement that the flows in the Kleinwes Rietspruit must be maintained artificially by water pumped from underground by Sibanye.

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impacts on water quality. 3.3 The CBAR states that the "system has re-baselined". This conclusion can only be reached if it is acceded that the current flow in the Kleinwes Rietspruit has after more than 40 years established as itself as a "new normal" which had been relied upon by users and communities as a certainty. While it is in theory so that the flow will return closer to the flow it had had during the 1970's, Section 21(i) of the NWA makes no distinction in this respect. Section 21(i) requires that a water use licence be applied for when any activity is undertaken that alters, the "bed, banks, course or characteristics of a watercourse;". 3.4 There can be no doubt that this is the case with respect to the Kleinwes Rietspruit and that decommissioning of the Ezulwini underground operations will in fact completely alter the bed, banks, course or characteristics of the Kleinwes Rietspruit from its normalised as per the past 40 years. It is also clear that this is the direct and immediate consequence of the closure of the Ezulwini underground mining operations.						By terminating pumping, over time the river will return to its original baseline. Legally, Sibanye is not obliged to discharge water into the Kleinwes Rietspruit in order to maintain the artificial baseline. In the EMPr, commitments have been made to monitor the Kleinwes Rietspruit. If significant erosion is evident on the Kleinwes Rietspruit and interference is required, then applications can be made for Section 21(c) and (i) water uses at that time.
4. Kleinwes Rietspruit Wetland Rehabilitation Licencing 4.1 Moreover, the CBAR reflects the following with respect to the artificial wetland –"With respect to surface water quality on the Kleinwes Rietspruit, the current water quality in the Kleinwes Rietspruit is generally acceptable, with respect to the constituents that were assessed (excluding						The Wetland Rehabilitation Project is a separate project being implemented by EMC. South Deep is also fully aware of the work being done at Ezulwini regarding sedimentation as it is part of a joint task team working on these issues to the mutual

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the uranium concentration). It is expected that there will be a degradation in the water quality immediately downstream of the Peter Wright Dam, particularly with respect to uranium concentrations. This is due to the artificial wetland downstream of the plant that is a contributor to the uranium levels in the Kleinwes Rietspruit." "The artificial wetland upstream of the Peter Wright Dam is a large contributor of the uranium concentrations and uranium load in the Kleinwes Rietspruit. Once pumping ceases the dilution effect from the water will be removed and the impact will be negative in terms of concentration, but not load. The only way a positive impact, on the aquatic ecology, can be achieved is if the application submitted to the relevant authorities, to rehabilitate the wetland is approved and successfully implemented by Sibanye." "…The presence of permanent wetlands, will likely change to be more seasonal or temporary in nature. The change in hydrology will impact on all of the other wetland drivers: Geomorphology, Ecology and Water Quality. Specifically, any tailings or contaminants present in the watercourses which are currently being held in situ by the Phragmites reed beds may be released further downstream if the wetland vegetation reduces in extent due to a lower water flow. This may lead to increased turbidity, deposition of sediments and release of heavy metals and other particles. The Kleinwes Rietspruit system changing to a non-perennial system as it was initially, can also potentially impact on aquatic ecology species by favouring those organisms that thrive in slow moving to stagnant water and negatively affecting the						benefit of both mines.

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invasive species in the watercourses." "…The Uranium level is likely to remain the same or increase due to lack of dilution effect if tailings are not removed. Settling ponds downstream of all contaminated areas are to be installed to prevent contaminated sludge entering the wetland systems. These settling ponds are to be cleaned on a regular basis in order to maintain capacity, with the contaminated material disposed of in an appropriate manner. An application to rehabilitate these wetlands was submitted by Sibanye to the DWS in 2016, however no response has been received to date. The same vegetation monitoring must take place in the Leeuspruit where it is known that the sediment samples taken by NSS (NSS, 2014) were contaminated and are currently being held in situ by the Phragmites reed beds." 4.2 The CBAR is clear that the risk posed by the wetland can only be resolved by the approval of a WUL for "rehabilitation" of the wetland. 4.3 Regulation 9(2) of GNR 704 to the NWA, also states as follows with respect to decommissioning of mining operations: - "Temporary or permanent cessation of mine or activity…(2) Any person in control of a mine or activity must ensure that the in-stream and riparian habitat of any water resource, which may have been affected or altered by a mine or activity, is remedied so as to comply with these regulations." 4.4 As is further evident from all the above extracts, the proposed activity will						

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exacerbate the risk to various surrounding water resources and in some instances, the impact may require requires J&W to consider licensing those water use activities. It is for this very reason that South Deep is of the view that the alignment of applications is required in terms of the NEMA Regulation 7(4). The DWS and DMR can simply not accede to the recommendations of the CBAR in respect of the water resources, unless and until the information generated in the CBAR is aligned and coordinated with the information and approval process of the WUL these water resources.						
5. Waste Management Licence and further radioactivity implications 5.1 It is further unclear whether the WUL apparently submitted to the DWS during 2016 for the remediation of the wetland, included the installation of "settling ponds" downstream of all contaminated areas, as required by virtue of the CBAR. If not, it is in any event clear that an application to do so should have been submitted in terms of the relevant provisions of the NWA, such as sections 21(c) and (i) as well as item 19 of GNR 983 to the NEMA Regulations and/or an appropriate Waste Management Licence in terms of the National Environmental Management: Waste Act 49 of 2008 (NEMWA). 5.2 Therefore, even if a WUL had been submitted, there is no mention of any application for environmental authorisation or waste management licence having been submitted with respect to the management of waste material. To the extent that such						The WULAA did not include this as this is not required for the purposes of the application for the decommissioning of the underground workings. A waste management licence is also not required for the decommissioning of the underground workings.

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waste material would be radioactive, the requisite approvals under the National Nuclear Regulator Act 47 of 1999 (NNRA) would be required. It is not sufficient for Ezulwini to merely allude to other authorisations required for purposes of closure, doing so incomprehensively and without submitting, integrating and aligning those applications with the CBAR process as required.						
C. OTHER REGULATORY AND PROCEDURAL OMISSIONS **1. DWS Best Practice Guidelines and Regional Strategy** 1.1 The comments in Table 1 of Annexure A identify regulatory gaps with specific reference to the Department of Water and Sanitation's Best Practice Guideline regarding water management aspects for mine closure. The only consideration with regards to regulations on water management is the amendment of the Water Use Licence (WUL) with respect to the cessation of certain water uses. 1.2 There is no indication that all impacts associated with the partial closure of Ezulwini mine have been highlighted to the DWS. The Ezulwini mine forms part of a system of underground interconnected shafts. A regional mine closure strategy has not been considered and discussed in the reports. **2. Closure Objectives and Reports in terms of the MPRDA Regulations**						The DWS Best Practice Guidelines were considered and applied where relevant. The SRK specialist study has been updated and is attached as Appendix C. Sibanye has been in consultation with the potentially affected mines to discuss a strategy. These discussions are still underway. We believe that the proposed closure of the underground workings is aligned to the Regional Mine Closure Strategy for the Far West Rand in terms of the applicable aspects which have been covered by the application (interconnection of mining compartments, Acid Rock Drainage and Mine Drainage, Salt loads, decanting of flooded mines, ground instability and radioactivity/ Uranium). When Sibanye undertakes the closure

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2.1 Mine closure objectives have been presented in the EMPr. There is however no indication that these objectives were developed in conjunction with the relevant authorities, viz., DMR, DEA, DWS, etc. as required in terms of the Regulation 62(c) of the MPRDA regulations. 2.2 As a corollary of the envisaged closure application under section 43 of the MPRDA, neither a Final Performance Assessment in terms of Regulations 55(8) and (9) of the MPRDA Regulations, nor an Environmental Risk Report contemplated in terms of MPRDA Regulation 60, was integrated with the CBAR. **3. Downstream Water Users** 3.1 The applicant appears to be taking no responsibility for downstream secondary impacts associated with loss of water or possible changes in chemistry due to loss of water. It is unclear what Ezulwini's accepted responsibility is to downstream water users and/or neighbours due to the provision of water over a long period of time. The surface water report is silent on downstream users and the impacts thereon. 3.2 The impact assessment regarding the Kleinwes Rietspruit drew numerous concerns, particularly from downstream water users who have indicated that their very livelihoods stand to be affected. At p 100 of the CBAR, the EAP states, "There are no proposed mitigation measures for this activity to reduce the negative impacts on						application for the entire Ezulwini Mine, this should be re-assessed in terms of all the closure activities. The purpose of the public participation process is to obtain the inputs of all the stakeholders (including those mentioned in this comment) on all aspects of the reports, including closure objectives. This process provides the opportunity to provide input to the closure objectives. This section 43 application in terms of the MPRDA is a separate application to the Basic Assessment application although certain information in the FBAR will also be used in support of this application by EMC **3.1 Response:** The closure of Ezulwini will result in the return of surface and groundwater water levels closer to the natural state (in about 7 years). It would be uneconomical to maintain an unnatural environmental situation at large expense to subsidise activities of lower commercial value downstream. The costs of running the pumps

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surface water quantity". At p 110 of the CBAR the mitigation type is merely "continue engagement in forums in collaboration with local government to discuss potential impacts and development implement mitigation measures". 3.3 Apart from the fact that no mitigation to this socio-economic impact was devised, it is also untenable to reach a conclusion that the impact is "Moderate (Negative)", but to the recommend that "potential impacts" be discussed in future. This leaves the impression that the impact assessment has in effect been postponed to an indistinct point in future, which is clearly unlawful. The response to these impacts also displays a disregard for the plight of communities affected by the closure and violates the notion of sustainable development at its most fundamental level.						at Ezulwini are R 156m per year (excluding the environmental costs related to carbon energy use). The maximum potential impact on the farming sector in terms of income and job losses (direct and flow-on) are estimated at R51m per year, assuming total cessation of farming activities at affected farms. The estimates were based on extensive interviews with farming operations on the Kleinwes Rietspruit and Leeuspruit, average yields/hectare and employment/turnover ratios in Westonaria and input/supply ratios in Gauteng agricultural sector. The list of interviews is provided in the SEIA, (Appendix C). Ezulwini may have an obligation towards certain water users that can prove that they have experienced a decline in ground water levels due to the mining operations of EMC and who have been provided with water from Ezulwini via pipeline, to compensate for groundwater losses. A claim must be submitted to the Legal Department of EMC in this regard. This situation could potentially relate to farming activities north of the shaft.

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						3.2 Response: Refer to the response to 3.1 above. **3.3 Response:** See response for 3.1 above. The estimated impacts that were calculated represents the maximum impact on the agriculture impact and 'potential' impacts in this regard refer to actual versus maximum high end calculations. It should also be noted that since 2013 Sibanye released no additional water to Leeuspruit and therefore no social programmes of the Gold Alliance Agricultural Project (GAAP) situated on the River would be affected by the cessation of pumping activities (Appendix C)
It's accepted that the risk of underground mine water eventually reporting to the Gemsbok Eye, once dewatering of the Ezulwini mine void ceases, is regarded as low. (a) What measures, if any, are to be put in place to monitor the re watering regime over time to compare the actual situation with predicted scenarios?; and (b) What measures are foreseen should any underground mine water be found to report to the surface in the long-term?	Mr	Jurgo van Wyk	Department of Water and Sanitation, Scientist Manager: Water Quality Planning	2 June 2017	Email received and discussions at the Wonderfontein/ Loopspruit Forum meeting on 30 May 2017 where a summary presentation of the CBAR was presented.	Dedicated monitoring boreholes have been drilled to monitor the re-watering quality and levels. If there is contamination, the water level will be controlled through pumping and the contaminated water treated before discharge. This is considered to be an unlikely scenario.
Will the 1 m pipeline be able to handle the additional hydraulic load once the Gemsbok Eye starts to flow again, also taking cognisance of potential changing demands from other users of the 1 m pipeline over	Mr	Jurgo van Wyk	Department of Water and Sanitation, Scientist Manager: Water Quality	2 June 2017	Email received and discussions at the Wonderfontein/ Loopspruit Forum meeting on 30 May	The pipeline was designed with a capacity of 120 Ml, however it is currently operating at a capacity of 100 Ml so there is a risk of overflow into the

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time?			Planning		2017 where a summary presentation of the CBAR was presented.	Wonderfonteinspruit if the capacity is exceeded. However, this overflow water will be lost to sinkholes, which will report to Sibanye Gold's Kloof operations. It is also expected that Sibanye's WRTRP will be in place by the time the Gemsbokfontein Eye flows again, which will reduce the water volumes in the Wonderfonteinspruit.
The Department (GDARD) has reviewed the above-mentioned document received on 3 April 2017 which is applicable on the various farm portions as listed in pages 4 to 7 in table 3.3 of the said document. The reports reviewed are of a consultative or draft nature hence the recommendations and proposals herein from the Department should be included or reported upon in the final documents that will be submitted for review. 1. Background Notice has been given to cease the pumping water from underground and terminate the underground mining activities in respect of the above mining operations since the current dewatering programme, or even a decelerated or phased dewatering programme is not economically nor environmental beneficial. Continued pumping of underground water from the workings has contributed to financial losses to the mine and in circumstances where mining is no longer profitable in any event. 2. Comments: The Department's (GDARD) GIS identified the following above ground environmental attributes and land uses of the affected area: a. Parts of the area, particularly in the northern part, are defined as being "Critical Biodiversity Areas " and "Ecological Support Areas" whilst	Mr	Steven Mukhola	GDARD	28 July 2017	Email	Noted.

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also having primary vegetation. b. A number of sensitive water bodies that include wetlands as well as non-perennial rivers/streams are located in the affected area. c. There is an occurrence of a Class 4 ridge in the affected area. d. There are some prominent farming activities that are dispersed throughout the area.						
Recommendations: The conditions and recommendations of the closure plan must be strictly adhered to in terms of rehabilitation of the land where mining and other related activities have taken place. Comments provided below should be incorporated into the EMPr and other documents: a. It should be confirmed and certified that mitigation and precautionary measures contained in the Environmental Management Programme for the protection of the sensitivities found on site and mitigation measures prescribed were undertaken. b. Records of monitoring and auditing of activities must be made available for official inspection purposes. c. Apart from environmental aspects, conditions relating to health and safety for officials involved in the closure activities should be adhered to. d. It should be verified that measures to deal with dust, noise, pollution as well as water and soil contamination were applied in accordance with the prescribed legislation. e. Should any farming activities have been affected, produce and harvest resulting therefrom should be certified as being fit and safe for human consumption. f. Although as rightly indicated in the report, the applicant cannot be held accountable for the detrimental influences by third parties further	Mr	Steven Mukhola	GDARD	28 July 2017	Email	Noted. The EMPr has been updated to include these conditions.

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downstream due to the reduced water flows, the applicant should still act in a responsible manner and collaborate with the authorities and other stakeholders to make information available in a timeous manner as to his intentions or actions, so as to enable effective and appropriate downstream actions and mitigation measures. g. The monitoring and evaluation programme should have an early detection method in respect of any contamination threats particularly radiation threats and other radiological hazards. h. Public mediums such as the Wonderfontein - Loopspruit forum or its successor should be kept informed of development so that it can disseminate information to its members and wider audience. i. Should there be any queries concerning this issue, please contact the official of the Department on the number given above.						The expected uranium level at the Gemsbokfontein Eye is 0.03 mg/l. This is in line with the SANS 241 Drinking Water Standard. The radioactivity associated with the uranium should therefore not pose a risk to human health. However, it is recommended that the total alpha and beta radioactivity levels be monitored in the dolomites up until 3 years after the Eye has started flowing to ensure that the water does not pose a radioactivity risk. Further, it is highly unlikely that the deep mine water will mix with the dolomitic water due to stratification.
Comments received on the Revised Consultation Basic Assessment Report Review period 16 August 2017 to 15 September 2017						
Concern: Contamination of water from the eye. Mitigation type: Identify potential pollution sources other than mining. Lucky Farm has been farming in Westonaria since 1979 and Bekkersdal has been in existence before that and Simunye perhaps 15 years, we currently sample water every month as per the regulation for our food processing facility. We are the only farm in the area. The pollution from the surrounding towns would be of bacterial nature leaking sewerage lines, from agriculture it would be from infiltration of agrochemicals.	Mr	AJ de Andrade	Lucky Farms	16 August 2017	Email	In the case that monitoring shows that the mine is impacting on the dolomitic water in such a manner that it becomes unusable for other water users, such as farming, then the mine will be required to develop mitigatory measures to address the contamination, which may include treatment of water.

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Pollution from mining would include AMD AND CONTAMINATION OF RADIOACTIVE ELEMENTS AND OTHER CHEMICALS ASSOCIATED WITH GOLD MINING. In your reports, it states the mine will treat water only of significant contamination is observed at the eye. Question: What exactly are you testing in the water. Who determines what is significant? Surely from results of water testing the source of contamination can be identified due to the source thereof. Are these water sample results available to the public and affected parties? How often is the water rested? If the water of the eye had to be treated this means the water used by Lucky Farm for irrigation and processing would also be contaminated. Are there funds available in guarantee for this scenario? If Lucky Farm's water becomes contaminated the business would close down what mitigation is in place for this scenario irrespective of the likelihood?						The chemical constituents and the frequency that must be analysed for in the groundwater are listed in the EMPr, Part B of the FBAR. Note that radioactivity must also be monitored and analysed. The chemical constituents that have to be monitored and analysed have been listed by the geohydrologist in Section 4.8 of the specialist geohydrology report, under Appendix C. Funding for the required sampling of the boreholes and the analysis of the samples is provided for by EMC – see Part B of the FBAR. The water is tested monthly. J&W recommended in the EMPr (Part B of the BAR) that the communication established by Mr Hira, must be continued by Sibanye Gold. Sibanye has stated that Ms Ethne Makgasane-Lefakane has taken over this portfolio from Mr Hira and will continue to engage with Mr de Andrade on questions he may have and data he requests relating to the water quality.
Change in ground stability due to rewatering: Westonaria Gold mine under JCI placed ground monitoring points at Lucky Farm until Harmony owned the mines the points on our property were	Mr	AJ de Andrade	Lucky Farms	16 August 2017	Email	Ground stability monitoring has to continue and loops that have to be monitored are specified in Part B of the BAR – see Figure 1.3. New monitoring loops have

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monitored. Under Sibanye why are these points not monitored? Will they be monitored during rewatering?						been proposed as well.
Socio-economic: Direct income losses for adjacent farmer's abstracting water from Kleinwes Rietspruit. Mitigation type: The document mentions assisting farmers, how? Lucky Farm at a meeting at Lido Sands hall, was assured by mine management present that their concerns regarding closure of their farm along the Kleinwes Rietspruit would be addressed. In the interim Mr Hethen Hira from Sibanye Gold presented Lucky Farms with a ten-year lease. I explained to Mr Hira that we would require additional power for the proposed irrigation on the property adjacent to Lucky Farm in Westonaria and that we would need to secure power before signing the lease. I initially asked Mr Hira if Cooke 3 would not have power but he said that it would not be possible. Lucky Farm currently draws power from the local municipality and they indicated there is not additional power available. We then approached Eskom and Mr Hira kindly assisted with a motivational letter for the power upgrade from Eskom. Once Eskom confirmed the power availability, Lucky Farm signed the lease. Mr Hira has resigned from Sibanye Gold and we now have no communication from the mine however he mentioned that Sibanye property division did now NOT want to sign the lease. This example of assistance by the mine will not help any farmer and just cause anxiety, frustration and lack of trust, for this reason I ask how the mine will assist farmers? Please advise if my questions will be answered and	Mr	AJ de Andrade	Lucky Farms	16 August 2017	Email	J&W recommended in the EMPr (Part B of the BAR) that the communication established by Mr Hira, must be continued by Sibanye Gold. Sibanye has stated that Ms Ethne Makgasane-Lefakane has taken over this portfolio from Mr Hira and will continue to engage with Mr de Andrade on his proposal.

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acknowledged in your document.						
The Council for Geoscience is of the view that, it will be negligent to say the least, to allow any form of new developments within the affected area (compartment), especially during the first 7 years as uncertainties exist in terms of the ground response, rate of re-watering and potential seismicity that could be triggered. These uncertainties still need to researched and results should be adequately communicated to all affected parties. The CBAR has touched on critical elements of the potential disaster due to re-watering. However, monitoring and early warning system will be critical, especially during the 1st 7 years. No development should be allowed within the affected compartment until all the grey areas are well researched.	Mr	Sifiso Ngubelanga	Council for Geoscience	6 September 2017	Email	Noted. The recommendation has been added to the EMPr.
The Department (Joburg Impact Management Sub-Unit) has reviewed the Revised CBAR and provides the following amended comments: Recommendations provided in the High and Low Reports must be adhered to and implemented where necessary: - Structures to slow the flow velocity upon discharge into the Klein Wes Rietspruit must be green infrastructure. - Structures used to attenuate flow within the Klein Wes Rietspruit must be green infrastructure. Gabions or riprap may be utilized however green infrastructure designs must be applied. - The polluted wetland to the north-west of the Peter Wright Dam must be remediated and the source of aluminum pollution be removed. This wetland must form part of the rehabilitation strategy.	Ms	Mashudu Ratshitanga	Joburg Metro	28 August 2017	Email	Noted. The recommendations have been added to the EMPr.
It is understood that erosion mitigation measures will be developed should erosion be identified. However, examples of possible erosion mitigation measures	Ms	Mashudu Ratshitanga	Joburg Metro	28 August 2017	Email	Noted. This recommendation has been added to the EMPr.

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along both the Leeuspruit and Klein Wes Rietspruit must be included in the FBAR and EMPR and this must include green infrastructure.						
The DWS should issue the outstanding directive to Sibanye as a matter of urgency to ensure that rehabilitation of the wetlands upstream of the Peter Wright Dam and downstream of the Ezulwini Operation be undertaken.	Ms	Mashudu Ratshitanga	Joburg Metro	28 August 2017	Email	Noted and EMC will follow-up with DWS in this regard.
The wetlands rehabilitation plan must be implemented and adhered to. The wetland rehabilitation plan must be submitted to this Department for review.	Ms	Mashudu Ratshitanga	Joburg Metro	28 August 2017	Email	Noted and agreed.
Gold Fields (South Deep Gold Mine) has submitted the following documents as their comments on the second version of the CBAR: - A 25-page letter from South Deep Gold Mines from Mr Preece - Annexure A1 – a table listing comments on the revised Sibanye CBAR documentation. Each comment has been assessed in terms of whether the comment has been addressed by Sibanye in the Revised BAR or not. Responses / comments were provided to justify the finding. Additional issues / comments were made. - A technical memorandum (ref 1670209_Memo_006) from Golder Associates – 12 pages. - A technical memorandum (ref 1670209_Memo_007) from Golder Associates – 26 pages	Mr	Martin Preece	Gold Fields	15 September 2017	Email	This is an amplification of the comments received on the initial CBAR, the responses to which (that were contained in Appendix F9 – Stakeholder Comments) South Deep did not consider. Detailed responses to the concerns as contained in Annexure A1, are again appended as **Appendix F9** of this report. Responses are included on the new comments received. It is believed that the below documents are summaries of the Annexure A1 and repetitions of the comments on the initial CBAR and therefore have been addressed via the responses to Annexure A1 in **Appendix F9**: - A 25-page letter from South Deep Gold Mines from Mr Preece - A technical memorandum (ref 1670209_Memo_006)

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						from Golder Associates – 12 pages. - A technical memorandum (ref 1670209_Memo_007) from Golder Associates – 26 pages

Telephonic contact was made with the relevant Ward Councillors (Cllr Njani – Simunye; Cllr Nontombi Dyase – Simunye; Cllr Penny Mphole - Poortjie; Cllr Ngamtwini - Thusanang) to confirm receipt of the announcement documents of the project. No comments have been received to date. A one-on-one consultation meeting was arranged with the municipalities and Ward councillors during the public review period, however none of the above-listed ward councillors attended.