

## Gina Martin

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**From:** William Joughin <WJoughin@srk.co.za>  
**Sent:** 01 March 2018 05:07 PM  
**To:** 'Ian Saunders'; Lindsay Linzer  
**Subject:** RE: Summary of water barrier pillar and plug stability during re-watering of Ezulwini

Ian

I have sent a new link at 17:00. This folder contains the correct documents.

Apologies, I was trying to multitask.

Regards

William

---

**From:** Ian Saunders [mailto:ians@geoscience.org.za]  
**Sent:** Thursday, 01 March 2018 13:40  
**To:** William Joughin <WJoughin@srk.co.za>  
**Subject:** RE: Summary of water barrier pillar and plug stability during re-watering of Ezulwini

Dear William,

I am unable to access these folders.

Best Regards

Ian

---

**From:** William Joughin [mailto:WJoughin@srk.co.za]  
**Sent:** 01 March 2018 09:57 AM  
**To:** Ian Saunders  
**Cc:** Lindsay Linzer  
**Subject:** RE: Summary of water barrier pillar and plug stability during re-watering of Ezulwini

Ian

Please find the links to the two reports below. The first report deals with the Ezulwini South Deep boundary and includes the fluid induced seismicity analysis. The second deals with the Ezulwini Cooke 3 boundary. There is no fluid induced seismicity at this boundary, but the mine seismic data was analysed.

<https://www.dropbox.com/preview/projects%20d/507569%20cooke4pillars/reports/Phase%201%20final/507569%20Re-watering%20of%20Ezulwini%20Phase%201%20final%20-%20rev2.docx?role=personal>

<https://www.dropbox.com/preview/projects%20d/507569%20cooke4pillars/reports/Phase%201%20final/20170810%20507569%20Phase%203%20Ezulwini%20Cooke%203%20Plug%20Amended%20COMBINED%20FINAL.PDF?role=personal>

Please confirm that you can access the links.

Regards

William

---

**From:** Ian Saunders [<mailto:ians@geoscience.org.za>]  
**Sent:** Thursday, 01 March 2018 05:52  
**To:** William Joughin <[WJoughin@srk.co.za](mailto:WJoughin@srk.co.za)>  
**Cc:** Lindsay Linzer <[LLinzer@srk.co.za](mailto:LLinzer@srk.co.za)>  
**Subject:** RE: Summary of water barrier pillar and plug stability during re-watering of Ezulwini

Dear Joughin,

Sorry for not replying earlier, I will call you 9:00 this morning.

Best regards

Ian

---

**From:** William Joughin [<mailto:WJoughin@srk.co.za>]  
**Sent:** 28 February 2018 06:22 PM  
**To:** Ian Saunders  
**Cc:** Lindsay Linzer  
**Subject:** RE: Summary of water barrier pillar and plug stability during re-watering of Ezulwini

Ian

We need to talk as soon as possible as Sibanye is anxious to have all queries concluded. A phone call or skype will work, unless you want to meet in person. I am available between 09:00 and 11:00 tomorrow. Alternatively Monday and Tuesday next week will work any time that suits you.

Regards

William Joughin  
SRK Consulting  
[wjoughin@srk.co.za](mailto:wjoughin@srk.co.za)  
+27 83 601 9527

On Mon, Feb 26, 2018 at 8:21 AM +0200, "Ian Saunders" <[ians@geoscience.org.za](mailto:ians@geoscience.org.za)> wrote:

Dear William,

Did you have a date in mind?

Best Regards

Ian

---

**From:** William Joughin [<mailto:WJoughin@srk.co.za>]  
**Sent:** 22 February 2018 05:16 PM  
**To:** Ian Saunders  
**Cc:** Gina Martin; Henk Coetzee; Marius van Zyl; Johan Wagner; Lauren Dell; Lindsay Linzer  
**Subject:** RE: Summary of water barrier pillar and plug stability during re-watering of Ezulwini

Ian

Can we meet to discuss the seismic analysis?

Regards

**William Joughin** *Pr Eng, FSAIMM, MSANIRE*  
Chairman and Principal Mining Engineer (Geotechnical)



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**Mobile:** +27-83-601-9527; **Direct:** +27-11-441-1214

**Email:** [wjoughin@srk.co.za](mailto:wjoughin@srk.co.za); **Skype:** william.joughin  
[www.srk.co.za](http://www.srk.co.za)

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**From:** Henk Coetzee [<mailto:henkc@geoscience.org.za>]  
**Sent:** Thursday, 22 February 2018 10:33  
**To:** Marius van Zyl <[vanzyl@jaws.co.za](mailto:vanzyl@jaws.co.za)>; William Joughin <[WJoughin@srk.co.za](mailto:WJoughin@srk.co.za)>  
**Cc:** Gina Martin <[gina@jaws.co.za](mailto:gina@jaws.co.za)>; Ian Saunders <[ians@geoscience.org.za](mailto:ians@geoscience.org.za)>  
**Subject:** RE: Summary of water barrier pillar and plug stability during re-watering of Ezulwini

Dear Marius

Please could you liaise with Ian Saunders (cc'ed in this mail) on what our Seismology Section would need here.

Kind regards

Henk

**Dr. Henk Coetzee**  
**Specialist Scientist**  
**Water and Environment - Applied Geoscience**  
**Tel:** +27 (0)12 841 1398  
**Email:** [henkc@geoscience.org.za](mailto:henkc@geoscience.org.za) | **Website:** <http://www.geoscience.org.za>  
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**From:** Marius van Zyl [<mailto:vanzyl@jaws.co.za>]  
**Sent:** 22 February 2018 10:25 AM  
**To:** William Joughin <[WJoughin@srk.co.za](mailto:WJoughin@srk.co.za)>

Cc: Gina Martin <[gina@jaws.co.za](mailto:gina@jaws.co.za)>; Henk Coetzee <[henkc@geoscience.org.za](mailto:henkc@geoscience.org.za)>  
Subject: FW: Summary of water barrier pillar and plug stability during re-watering of Ezulwini

Dear William

Can you please help Henk with the data used in the seismological assessment and discuss with him what he requires. Time is of the essence.

Thanks.

**Marius van Zyl Pr Sci Nat**  
Environmental Scientist  
Technical Director, Jones & Wagener



---

**From:** Henk Coetzee [<mailto:henkc@geoscience.org.za>]  
**Sent:** 22 February 2018 10:21 AM  
**To:** Marius van Zyl <[vanzyl@jaws.co.za](mailto:vanzyl@jaws.co.za)>  
**Cc:** Ian Saunders <[ians@geoscience.org.za](mailto:ians@geoscience.org.za)>  
**Subject:** RE: Summary of water barrier pillar and plug stability during re-watering of Ezulwini

Dear Marius

I have downloaded the report. Is it possible to get the data used in the seismological assessment?

Regards

Henk

**Dr. Henk Coetzee**  
Specialist Scientist  
Water and Environment - Applied Geoscience  
Tel: +27 (0)12 841 1398  
Email: [henkc@geoscience.org.za](mailto:henkc@geoscience.org.za) | Website: <http://www.geoscience.org.za>  
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**From:** Marius van Zyl [<mailto:vanzyl@jaws.co.za>]  
**Sent:** 22 February 2018 07:08 AM  
**To:** William Joughin <[WJoughin@srk.co.za](mailto:WJoughin@srk.co.za)>; Henk Coetzee <[henkc@geoscience.org.za](mailto:henkc@geoscience.org.za)>  
**Cc:** Gina Martin <[gina@jaws.co.za](mailto:gina@jaws.co.za)>; Max Madubane <[max.madubane@dmr.gov.za](mailto:max.madubane@dmr.gov.za)>; Johan Wagner <[johan.wagner@sibanyestillwater.com](mailto:johan.wagner@sibanyestillwater.com)>; Catherine Warburton <[catherine@warburtons.co.za](mailto:catherine@warburtons.co.za)>; Lauren Dell <[Lauren.Dell@sibanyestillwater.com](mailto:Lauren.Dell@sibanyestillwater.com)>; Lindsay Linzer <[LLinzer@srk.co.za](mailto:LLinzer@srk.co.za)>  
**Subject:** RE: Summary of water barrier pillar and plug stability during re-watering of Ezulwini

Hi Henk

If you have not yet received the FBAR and appendices to the FBAR from the Department of Minerals (DMR), we can deliver a CD today. Please indicate whether or not you have received the information. We gave the DMR 15 soft copies of the FBAR and appendices in October 2017 for distribution to commenting authorities upon their request.

Best regards

**Marius van Zyl Pr Sci Nat**  
Environmental Scientist  
Technical Director, Jones & Wagener



---

**From:** William Joughin [<mailto:WJoughin@srk.co.za>]  
**Sent:** 22 February 2018 06:57 AM  
**To:** [henkc@geoscience.org.za](mailto:henkc@geoscience.org.za)  
**Cc:** Gina Martin <[gina@jaws.co.za](mailto:gina@jaws.co.za)>; Marius van Zyl <[vanzyl@jaws.co.za](mailto:vanzyl@jaws.co.za)>; Max Madubane (<[max.madubane@dmr.gov.za](mailto:max.madubane@dmr.gov.za)>) <[max.madubane@dmr.gov.za](mailto:max.madubane@dmr.gov.za)>; Johan Wagner <[johan.wagner@sibanyestillwater.com](mailto:johan.wagner@sibanyestillwater.com)>; Catherine Warburton <[catherine@warburtons.co.za](mailto:catherine@warburtons.co.za)>; Lauren Dell <[Lauren.Dell@sibanyestillwater.com](mailto:Lauren.Dell@sibanyestillwater.com)>; Lindsay Linzer <[LLinzer@srk.co.za](mailto:LLinzer@srk.co.za)>  
**Subject:** FW: Summary of water barrier pillar and plug stability during re-watering of Ezulwini

Henk

Please note that the seismic analyses are described in detail in the SRK reports submitted as appendices to the FBAR. I am very happy to meet with your seismic unit and discuss the seismic analyses.

Regards

**William Joughin Pr Eng, FSAIMM, MSANIRE**  
Chairman and Principal Mining Engineer (Geotechnical)



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**Mobile:** + 27-83-601-9527; **Direct:** +27-11-441-1214

**Email:** [wjoughin@srk.co.za](mailto:wjoughin@srk.co.za); Skype: william.joughin  
[www.srk.co.za](http://www.srk.co.za)

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**From:** Gina Martin [<mailto:gina@jaws.co.za>]  
**Sent:** 20 February 2018 10:11 AM  
**To:** [henkc@geoscience.org.za](mailto:henkc@geoscience.org.za); Max Madubane  
**Cc:** Marius van Zyl; Bashan Govender  
**Subject:** RE: Summary of water barrier pillar and plug stability during re-watering of Ezulwini  
**Importance:** High

Dear Henk and Max,

The below emails refer. Thank you for your consideration of this information.

William Joughin (the specialist who drafted the *Summary of water barrier pillar and plug stability during re-watering of Ezulwini*) has confirmed that the document submitted to Max on 31 January 2018 does not contain new seismological information and was based on the information and data within the SRK reports submitted as appendices to the Final Basic Assessment Report (FBAR) in October 2017 (Appendices C1 and H4).

Copies of these reports were made available to the DMR for distribution to all commenting authorities (of which the Council for Geoscience is one). Additionally, the announcement of the FBAR availability and link to download the documents, was sent to Sifiso Ngubelanga of the Council for Geoscience.

If you do not have a copy of the Ezulwini FBAR submission, please let us know so that we may send you a CD. Alternatively, you can download the documents from our website:

<http://www.jaws.co.za/public-review-documents/Sibanye-Gold-s-proposed-closure-of-the-underground-workings-of-the-Ezulwini-Operations/>

Kind Regards,

**Gina Martin Pr Sci Nat**  
Environmental Scientist, Jones & Wagener



---

**From:** Max Madubane [<mailto:Max.Madubane@dmr.gov.za>]  
**Sent:** 19 February 2018 14:49  
**To:** [gina@jaws.co.za](mailto:gina@jaws.co.za)  
**Cc:** [henkc@geoscience.org.za](mailto:henkc@geoscience.org.za); Rudzani Ramatsekisa <[Rudzani.Ramatsekisa@dmr.gov.za](mailto:Rudzani.Ramatsekisa@dmr.gov.za)>; [GovenderB@dws.gov.za](mailto:GovenderB@dws.gov.za); [KeetM@dws.gov.za](mailto:KeetM@dws.gov.za); Reuben Masenya <[Reuben.Masenya@dmr.gov.za](mailto:Reuben.Masenya@dmr.gov.za)>  
**Subject:** Fwd: Summary of water barrier pillar and plug stability during re-watering of Ezulwini

Good day,

Please assist as requested in the below email and also communicate directly with CGS on this matter. Please copy me in all correspondences between yourselves and CGS.

Regards,

Max Madubane  
Tel: +27 11 358-9776 or +27 12 444-3661  
Cell: +27 82 459-6867 / +27 84 512-2761

## Max Madubane

Mine Health & Safety

Tel : 011 358 9977

Email : [Max.Madubane@dmr.gov.za](mailto:Max.Madubane@dmr.gov.za)

Website :



**mineral resources**

Department:  
Mineral Resources  
REPUBLIC OF SOUTH AFRICA

Begin forwarded message:

**From:** Henk Coetzee <[henkc@geoscience.org.za](mailto:henkc@geoscience.org.za)>  
**Date:** 15 February 2018 at 09:26:34 SAST  
**To:** Max Madubane <[Max.Madubane@dmr.gov.za](mailto:Max.Madubane@dmr.gov.za)>, "GovenderB@dws.gov.za" <[GovenderB@dws.gov.za](mailto:GovenderB@dws.gov.za)>, "KeetM@dws.gov.za" <[KeetM@dws.gov.za](mailto:KeetM@dws.gov.za)>, Sunday Mabaso <[Sunday.Mabaso@dmr.gov.za](mailto:Sunday.Mabaso@dmr.gov.za)>, Reuben Masenya <[Reuben.Masenya@dmr.gov.za](mailto:Reuben.Masenya@dmr.gov.za)>, Molefe Morokane <[Molefe.Morokane@dmr.gov.za](mailto:Molefe.Morokane@dmr.gov.za)>  
**Cc:** Elliot Letsoko <[Elliot.Letsoko@dmr.gov.za](mailto:Elliot.Letsoko@dmr.gov.za)>, Thabo Ngwenya <[Thabo.Ngwenya@dmr.gov.za](mailto:Thabo.Ngwenya@dmr.gov.za)>, Mthokozisi Zondi <[Mthokozisi.Zondi@dmr.gov.za](mailto:Mthokozisi.Zondi@dmr.gov.za)>, Funwell Nkuna <[Funwell.Nkuna@dmr.gov.za](mailto:Funwell.Nkuna@dmr.gov.za)>, Ian Saunders <[ians@geoscience.org.za](mailto:ians@geoscience.org.za)>  
**Subject:** RE: Summary of water barrier pillar and plug stability during re-watering of Ezulwini

Dear Max

I've passed the letter on to our Seismology Unit. They have asked if we can get access to the original reports which this is based on and the seismological monitoring data used to develop the recommendations.

Kind regards

Henk

**Dr. Henk Coetzee**  
Specialist Scientist  
Water and Environment - Applied Geoscience  
Tel: +27 (0)12 841 1398  
Email: [henkc@geoscience.org.za](mailto:henkc@geoscience.org.za) | Website: <http://www.geoscience.org.za>  
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**From:** Max Madubane [<mailto:Max.Madubane@dmr.gov.za>]  
**Sent:** 31 January 2018 10:03 AM  
**To:** [GovenderB@dws.gov.za](mailto:GovenderB@dws.gov.za); [KeetM@dws.gov.za](mailto:KeetM@dws.gov.za); Sunday Mabaso <[Sunday.Mabaso@dmr.gov.za](mailto:Sunday.Mabaso@dmr.gov.za)>; Henk Coetzee <[henkc@geoscience.org.za](mailto:henkc@geoscience.org.za)>; Reuben Masenya <[Reuben.Masenya@dmr.gov.za](mailto:Reuben.Masenya@dmr.gov.za)>; Molefe Morokane <[Molefe.Morokane@dmr.gov.za](mailto:Molefe.Morokane@dmr.gov.za)>

**Cc:** Elliot Letsoko <[Elliot.Letsoko@dmr.gov.za](mailto:Elliot.Letsoko@dmr.gov.za)>; Thabo Ngwenya <[Thabo.Ngwenya@dmr.gov.za](mailto:Thabo.Ngwenya@dmr.gov.za)>; Mthokozisi Zondi <[Mthokozisi.Zondi@dmr.gov.za](mailto:Mthokozisi.Zondi@dmr.gov.za)>; Funwell Nkuna <[Funwell.Nkuna@dmr.gov.za](mailto:Funwell.Nkuna@dmr.gov.za)>  
**Subject:** Summary of water barrier pillar and plug stability during re-watering of Ezulwini

Good day All,

Please receive and study the attached document from Ezulwini and comment on the way forward with regard to their application to re-water the said mine.

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