



mineral resources

Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

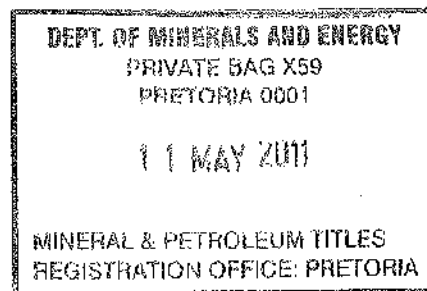
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CONVERTED MINING RIGHT

Granted in terms of Item 7 of Schedule II of the Mineral and Petroleum Resources
Development Act, 2002 (Act No. 28 of 2002)

*Barberton Mines (Pty)
Limited*

Fairview Mine



File MP 30/5/1/2/2/191 MR

F2005/08/12/004

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REGISTERED IN THE MINERAL & PETROLEUM TITLES
REGISTRATION OFFICE: PRETORIA

In the register of Mining Rights

On the 21st day of FEBRUARY 2012

Under MPT No.: 23/2012 MR

pp DIRECTOR-GENERAL: MINERAL RESOURCES

0018/2011
Protocol No: ~~2009~~
File Ref No F2005/08/12/004
Application No 191 MR
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LET IT HEREBY BE MADE KNOWN:

THAT on this **28th** day of **April** in the year **2011**, before me, **Wilma Nunes** a Notary Public, duly sworn and admitted, residing and practising at **Witbank**, in the **Mpumalanga** Province of South Africa, and in the presence of the subscribing competent witnesses, personally came and appeared:

Mishack Sunday Mabaso, Acting, Regional Manager, Mpumalanga Region of the Department of Minerals and Energy, and as such in his / her capacity as the duly authorised representative of:

THE MINISTER OF MINERALS AND ENERGY

The said Regional Manager, being duly authorised thereto under and by virtue of a Power of Attorney granted by the **DIRECTOR-GENERAL** of the Department of Minerals and Energy on the **29th** day of **March** in the year **2010** in terms of the powers delegated by the Minister on the **12th** day of May 2004 in terms of section 103 (1) of the Act.

Converted Mining Right: Converted in terms of item 7 of the Mineral and Petroleum Resources Development Act, No. 28 of 2002

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AND

Ronald Allan Holding, (ID No 520522 5133 08 1), in his capacity as the company's representative , and as such, the duly authorised representative of Barberton Mines (Pty) Limited (Fairview Mine):

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(Hereinafter together with his/her/its successors in title and assigns referred to as "the Holder", he, the said representative, being duly authorised thereto under and by virtue of a power of attorney/resolution of directors of the Holder, signed or passed at Johannesburg on the 18th day of April in the year 2011 which power of attorney or a certified copy of a resolution has this day been exhibited to me, the notary, and remain filed of record in my protocol with the minutes hereof.)

AND THE MINISTER AND HOLDER DECLARED THAT:

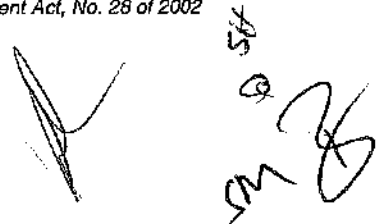
WHEREAS The State is the custodian of the Nation's mineral and petroleum resources in terms of section 3 of the Act.

AND WHEREAS The Holder has applied for conversion of an old order mining right in terms of Item 7 of Schedule 2 to the Act,

AND WHEREAS The **DIRECTOR-GENERAL** of the Department of Minerals and Energy has by virtue of powers delegated to him, converted the Holder's old order, mining right in terms of Item 7 of the Schedule to the Act.

NOW THEREFORE THE MINISTER CONVERTS THE HOLDER'S OLD ORDER MINING RIGHT SUBJECT TO THE FOLLOWING TERMS AND CONDITIONS:

Converted Mining Right:: Converted in terms of item 7 of the Mineral and Petroleum Resources Development Act, No. 28 of 2002



Definitions

In this mining right, the following words and expressions shall have the following meanings:

'**Act**' means the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002) and includes the Regulations, guidelines, circulars, directives and orders made in terms of that Act;

'**Environmental Management Programme**' is as defined in the Act and includes any other Environmental Management Programme approved in terms of the previous mining legislation;

'**Financial year**' means a complete financial year of the Holder which, at the time of the granting of this mining right, commences on 1st day of July in the year 2010; and ends on 30th day of June in the year 2011;

'**Holder**' is as defined in the Act, and specifically in relation to this right, it means **Barberton Mines (Pty) Limited**, Registration No/Identification No **1938/01176107**;

'**Mineral**' is as defined in the Act, and specifically in relation to this right means **Gold and Silver**;

'**Mining Area**' is as defined in the Act and includes any additional area of environmental liability as may be reflected on the Environmental Management Programme relating to this right;

'**Mining right**' is as defined in the Act and includes all the Annexures to it, agreements and inclusions by reference;

'**Mining Work Programme**' is as defined in the Act and as reflected in the attached **Annexure B** to this mining right;

'**Minister**' means the Minister of Minerals and Energy and includes the successors in title, the assignee or any person duly authorised to act in the Minister's place and stead;

'**Old order mining right**' is as defined in the Schedule to the Act.

'**Regional Manager**' is as defined in the Act and specifically in relation to this right means the Regional Manager for the **Mpumalanga** Region of the Department of Minerals and Energy;

'**Social and Labour Plan**', is as contemplated in regulation 46 of the Regulations to the Act and is as reflected in the attached **Annexure C** to this mining right; and

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1. Description of the Mining Area

The Mining Area shall comprise the following:

Certain: **Lots 119, 120, 123, 124, 126, 136, 137, 138, 140, 141, 142, 143 and 144 of Section A Kaap Block and the farms Worrall 352 JU, Bickenhall 346 JU and Hayward 310 JU, (but subject to Regulation 17 of the Mine Health and Safety Act, excluding any area within 100 metres of any public road, railway, cemetery, residential area or public area),**

Situated: **Mpumalanga Magisterial/Administrative District of Barberton**

Measuring: **3033.8643 hectares in extent.**

(In the case of various farms being involved, a list can be attached and referred to as **Annexure**);

Which Mining Area is described in detail on the attached Diagram/plan marked **Annexure A.**

2. Conversion of Old Order Mining Right

Without detracting from the provisions of Item 7 of the schedule to the Act, sections 5 and 25 of the Act, the Minister converts the holder's old order right and grants to the Holder the sole and exclusive right to mine, and recover the mineral/s in, on and under the mining area for the Holder's own benefit and account, and to deal with, remove and sell or otherwise dispose of the mineral/s, subject to the terms and conditions of this mining right, the provisions of the Act and any other relevant law in force for the duration of this right.

3. Commencement, Duration and Renewal

3.1. This mining right shall commence on **28 April 2011** and, unless cancelled or suspended in terms of clause 13 of this right and or section 47 of the Act, will continue to be in force for a period of **10 (Ten)** years ending on **27 April 2021**.

3.2. The Holder must continue to conduct mining operations failing which this right may be cancelled or suspended.

3.3. Any application for renewal must be submitted to the Regional Manger not later than 60 working days prior to the date of expiry of this right.

4. Amendments, Variation and Abandonment

4.1. The terms of this right (including by extension of the area covered by it or by the addition of minerals or a share or shares or seams, mineralized bodies, or strata, which are not at the time the subject thereof) may not be amended or varied without the written consent of the Minister.

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4.2. The Holder shall be entitled to abandon or relinquish the right or the area covered by the right entirely or in part. Upon abandonment or relinquishment of the mining area or any portion thereof, the Holder must:

4.2.1. Furnish the Regional Manager with all prospecting and /or mining results and/or information, as well as the general evaluation of the geological, geophysical and borehole data in respect of such abandoned area in so far as it applies to the mineral or any other mineral/s obtained in respect of this right and,

4.2.2. Apply for a closure certificate in terms of section 43 (3) of the Act.

4.3. With effect from the date the Holder has abandoned or relinquished a portion or portions of the mining area, and subject to section 43 of the Act, the Minister is entitled to grant any right, permit, or permission referred to in the Act in, on, or under the portion/s, so abandoned or relinquished, to any person/s.

5. Payment of Royalties and other Monies

5.1. The Holder shall as contemplated in section 25 (2) (g) pay to the State throughout the duration of this mining right, any royalties payable in terms of any Act or Amendment to an Act of Parliament implemented.

5.2. If, prior to the commencement of the Act, the Holder of this right paid any royalties, levies, fees, or consideration to the state, the Holder shall continue to pay same applicable to such old order mining right until such time a relevant Act of parliament is implemented.

6. Payment of Interest

If mining fees, any fees, any levy, royalties or consideration referred to in clause 5 are not paid punctually, the Holder shall be in mora and shall pay interest thereon at the rate prescribed in terms of section 80 of the Public Finance Management Act, 1999(Act 1 of 1999) reckoned from the date on which payment is due and payable, to the date of actual payment.


7. Restrictions and Obligations Imposed on the Holder

7.1. The Holder is entitled to the rights referred to in section 5(2), (3) and section 25 of the Act, and such other rights as may be contained in this mining right or such other right as may be granted to, acquired by or conferred upon the Holder by any other applicable law.

7.2. Mining operations in the mining area must be conducted in accordance with the Mining Work Programme and any amendment to such Mining Work Programme and an approved Environmental Management Plan.

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7.3 The Holder shall not trespass or enter into any homestead, house or its curtilage nor interfere with or prejudice the interests of the occupiers and/or owners of the surface of the Mining Area except to the extent to which such interference or prejudice is necessary for the purposes of enabling the Holder to properly exercise the Holder's rights under this mining right.


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8. Conditions on disposal of Minerals and/ or Products Derived from Mining

It is a condition of the conversion of this old order mining right that the Holder shall dispose of all minerals and/ or products derived from the exploitation of the mineral at competitive market prices which shall mean in all cases, non-discriminatory prices or non-export parity prices. If the minerals are sold to any entity, which is an affiliate or non-affiliated agent or subsidiary of the Holder, or is directly or indirectly controlled by the Holder, such purchaser must unconditionally undertake in writing to dispose of the minerals and any products produced from the minerals, at competitive market prices.

9. Mortgage, Cession, Transfer, and Alienation



This mining right, a shareholding, an equity, an interest or participation in the right or joint venture, or a controlling interest in a company, close corporation or joint venture, may not be encumbered, ceded, transferred, mortgaged, let, sublet, assigned, alienated or otherwise disposed of without the written consent of the Minister, except in the case of a change of controlling interest in listed companies.

10. Protection of Boreholes, Shafts, Adits and Openings.

All boreholes, shafts, Adits, excavations, and openings sunk or made, by the Holder during the currency of this mining right shall be sealed, closed, fenced, made safe by the Holder in accordance with the approved Environmental Management Programme, the Mine Health and Safety Act, 1996 or any other applicable laws and Regulations.

11. Holder's Liability for payment of Compensation for Loss or Damage

- 11.1. Subject to section 43 of the Act, the Holder shall, during the tenure of this right while carrying out the mining operations under this right, take all such necessary and reasonable steps to adequately safeguard and protect the environment, the mining area and any person/s using or entitled to use the surface of the mining area from any possible damage or injury associated with any activities on the mining area.
- 11.2. Should holder fail to take reasonable steps referred to above, and to the extent that there is legal liability, the holder shall compensate such person or persons for any damage or losses, including but not limited to damage to the surface, to any crops or improvements, which such person or persons may suffer as a result of, arising from or in connection with the exercise of his/her rights under this mining right or of any act or omission in connection therewith.

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12. Inspection of Mining Area

The Minister and/or any person duly authorised thereto in writing by the Minister shall be entitled to inspect the mining area, the Holder's mining operations and the execution of the approved Environmental Management Programme on the Mining Area as provided for in the Act, and any instruction conveyed in writing by the Minister to the Holder requiring the proper performance by the Holder of the Holder's obligations under this mining right shall be put into effect by the Holder in terms of the Act.

13. Cancellation or Suspension

- 13.1 Subject to section 47 of the Act, this mining right may be cancelled or suspended if the Holder:
- 13.1.1 Submits inaccurate, incorrect and or misleading information in connection with any matter required to be submitted under the Act;
 - 13.1.2 Fails to honour or carry out any agreement, arrangement, or undertaking, including the undertaking made by the Holder in terms of the Broad Based Socio Economic Empowerment Charter and Social and Labour plan, on which the Minister relied for the conversion of this right;
 - 13.1.3 Breaches any material term and condition of this mining right;
 - 13.1.4 Conducts mining operations in contravention of the provisions of the Act;
 - 13.1.5 Contravenes the requirement of the approved Environmental Management Programme; or
 - 13.1.6 Contravenes any provisions of this Act in any other manner.
- 13.2 Before the Minister cancels or suspends this right, the Minister shall:
- 13.2.1 Give written notice to the Holder indicating the intention to suspend or cancel this right;
 - 13.2.2 Give reason/s why the Minister is considering the suspension or cancellation of this right;
 - 13.2.3 Give the Holder 30 days to show reasons why the right should not be suspended or cancelled;
 - 13.2.4 Notify, the mortgagee [if any], of the intention to suspend or cancel this right; and
 - 13.2.5 Direct the Holder, where it is possible to remedy any contravention, breach or failure, to comply or to take such specified measures to remedy any contravention, breach or failure to comply.
- 13.3 If the Holder does not take the measures as specified by the Minister to remedy a contravention, breach or failure, the Minister may cancel or suspend this right after considering representations made by the Holder in terms of clause 13.2.3.

14. Records and Returns

- 14.1. The Holder shall maintain all such books, plans and records in regard to mining on the Mining Area as may be required by the Act and shall furnish to the office of the Regional Manager such reports and documents as may be relevant under this right.

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14.2. The Holder shall furnish to the Regional Manager all such monthly returns contemplated in section 28 (2) A of the Act not later than the 15th day of the month following the month in respect of which it was reported.

14.3 The Holder shall furthermore at the end of each year following commencement of this mining right, inform the Regional Manager in writing of any new developments and of the future mining activities planned in connection with the exploitation/mining of the minerals on the Mining Area.

15. Minister's liability for Payment of Compensation

The Minister shall not at any time be liable or responsible for the payment of compensation of whatever nature to the Holder, the Holder's successors-in-title or assignee, or any person whomsoever as a result of the conversion of this right.

16. Compliance with the Laws of the Republic of South Africa

The conversion of this Right, does not exempt the Holder and its successors in title and/or assigns from complying with the relevant provisions of the Mine Health and Safety Act, (Act No.29 of 1996) and any other law in force in the Republic of South Africa.

17. Provisions relating to section 2(d) and (f) of the Act

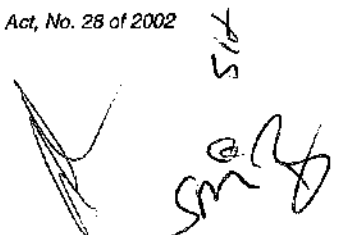
In the furthering of the objects of this Act, the Holder is bound by the provisions of an agreement or arrangement dated 18 June 2009 entered into between the Holder/ empowering partner and **Shanduka Gold (Pty) Limited and Shanduka Resources (Pty) Limited** (the empowerment partner) which agreement or arrangement was taken into consideration for purposes of compliance with the requirements of the Act and or Broad Based Economic Empowerment Charter developed in terms of the Act and such agreement shall form part of this right.

18. Social and Labour Plan

18.1 The holder must annually, not later than three months before the end of its financial year, submit a detailed implementation plan to give effect to Regulation 46(e) (i), (ii) and (iii) in line with the Social and Labour Plan.

18.2 The holder must annually, not later than three months after finalisation of its audited annual report, submit a detailed report on the implementation of the previous year's social and labour plan.

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19. Severability

Notwithstanding anything to the contrary, any provision of this mining right which is contrary to any provision of the Act or which is otherwise ultra vires, null and void, voidable, or unenforceable, shall be severable from the rest of this right, such rest thus being and remaining of full force, effect and enforceable.

20. Domicilia citandi et executandi

20.1. The parties hereto choose the following addresses as their *domicilia citandi et executandi* and for all purposes arising from this mining right, in particular for the purposes of serving of any notice in terms of this mining right, and any notice properly addressed to the under mentioned postal addresses of the parties shall be deemed to have been received by the addressee within 14 days if given in writing and posted by prepaid registered post addressed to the addressee at the relevant postal address:

20.1.1. In the case of the Minister:

Physical Address	Postal Address
Province House Cnr. Botha and Paul Kruger Street WITBANK Code 1035 Tel 013 656 1448 Fax 013 656 0932	Private Bag X7279 WITBANK 1035 013 656 1448 013 656 0932

20.1.2. In the case of the Holder:

Physical Address	Postal Address
Barberton Mines Fairview Mine Kaapmuiden/Malelane Road (R38) BARBERTON Code 1300 Tel 013 712 8500 Fax 013 712 9060	P O Box 121 BARBERTON 1300 013 712 8500 013 712 9060

20.2. Notwithstanding anything to the contrary herein contained, a written notice or communication actually received by a party at any place other than the chosen *domicilia citandi et executandi*

Converted Mining Right:: Converted in terms of item 7 of the Mineral and Petroleum Resources Development Act, No. 28 of 2002

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shall constitute adequate notice or communication to the party notwithstanding that it was not sent to or delivered at such party's chosen *domicilium citandi et executandi*.

20.3 Either party shall be entitled from time to time to change the *domicilia citandi et executandi* or postal address furnished above after giving at least 14 days prior written notice of such change to the other party, failing which the above mentioned addresses will remain in force.

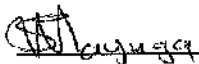
20.4 Any written notice or communication contemplated in this clause which is forwarded by one party to the other by registered post will be presumed to have been received by the addressee on the fourteenth day following the date of posting from an address within the Republic of South Africa to the addressee at the postal address of the addressee for the time being as determined in accordance with the provisions of this clause.


21. Costs

The Holder shall pay all costs and charges incurred in connection with the execution and registration of this prospecting right.

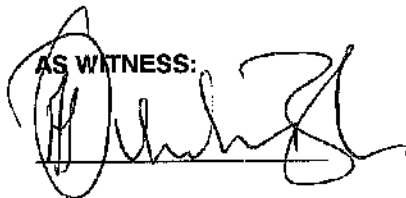
Thus done and signed at Witbank on the 28th day of April in the year 2011 in the presence of the undersigned witnesses:

AS WITNESS:





For and on behalf of the **Minister**

AS WITNESS:




For and on behalf of the **Holder**





water & sanitation

Department:
Water and Sanitation
REPUBLIC OF SOUTH AFRICA

Private Bag X313, Pretoria, 0001, Sedibeng Building, 185 Francis Baard Street, Pretoria,
Tel: (012) 336-7500, Fax: (012) 326-4472/ (012) 326-2715

LICENCE IN TERMS OF CHAPTER 4 OF THE NATIONAL WATER ACT, 1998 (ACT NO. 36 OF 1998) (THE ACT)

I, **Sifiso Mkhize**, in my capacity as Director General (Acting) in the Department of Water and Sanitation (herein after referred to as the Department) and acting under authority of the powers delegated to me by the Minister of Water and Sanitation, hereby authorise the following water uses in respect of this licence.

SIGNED: 

DATE: 18/08/2016

LICENCE NO: 04/X23F/ABEFGJ/4725
FILE NO: 27/2/2/X23F/071

1. Licensee:
Postal Address:

Barberton Mines (Pty) Ltd: Fairview Mine
PO Box 121
BARBERTON
1380

2. Water Uses

- | | |
|--------------------------------|--|
| 2.1 Section 21(a) of the Act: | Taking of water from a water resource, subject to the conditions set out in Appendices I and II. |
| 2.2 Section 21(b) of the Act: | Storage of water, subject to the conditions set out in Appendices I and III |
| 2.3 Section 21 (e) of the Act | Engaging in a controlled activity; Irrigation of any land with waste or water containing waste, subject to the conditions set out in Appendices I and IV |
| 2.4 Section 21 (f) of the Act: | Discharging waste or water containing waste into water resource, subject to the conditions set out in Appendices I and V |
| 2.5 Section 21(g) of the Act: | Disposing of waste in a manner which may detrimentally impact on a water resource, subject to the conditions set out in Appendices and VI. |
| 2.6 Section 21 (j) of the Act: | Removing, discharging or disposing of water found underground, subject to the conditions set out in Appendices I and VII. |

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3. Properties on which the use will be exercised

- 3.1 Remaining extent of Fairview 708 JU
- 3.2 Remaining extent of Hayward 310 JU
- 3.3 Remaining extent of Fairview 708 JU
- 3.4 Greenstone 917 JU Portion 82
- 3.5 Section A Kaap Block 123
- 3.6 Section A Kaap Block Lot 123
- 3.7 Remaining Extent of Bramber South 349 JU
- 3.8 Worrall 352 JU

3. Registered owners of the Properties

Table 1: Property details

Properties	Registered Owner/lease agreement	Title deeds
3.1 Remaining extent of Fairview 708 JU	Department of Public Works	T 122700/2006
3.2 Remaining extent of Hayward 310 JU	Department of Public Works	T 122700/2006
3.3 Remaining extent of Fairview 708 JU	Department of Public Works	T 122700/2006
3.4 Greenstone 917 JU Portion 82	Department of Public Works	T 122700/2006
3.5 Section A Kaap Block 123	Department of Public Works	T 122700/2006
3.6 Section A Kaap Block Lot 123	Department of Public Works	T 122700/2006
3.7 Remaining Extent of Bramber South 349 JU	Department of Public Works	T 122700/2006
3.8 Worrall 352 JU	Department of Public Works	T 122700/2006

4. Licence and Review Period

This licence supersedes the licence no 05/X23F/ABFGIJ/744 dated 08 July 2011 and is valid for a period of ten (10) years from the date of issuance, it may be reviewed at an interval not exceeding five (5) years.

5. Definitions

Any terms, words and expressions as defined in the National Water Act, 1998 (Act 36 of 1998) shall bear the same meaning when used in this licence.

"Department" means the Department of Water and Sanitation.

"Minister" means the Minister of Water and Sanitation.

"CEO" means the Chief Executive Officer of the Inkomati-Usuthu Catchment Management Agency and/ or his/her representative, Private Bag X11214, Mbombela, 1200.

"Act" means the National Water Act, 1988 (Act 36 of 1998)

"Report" refers to the reports entitled;

- (i) Integrated Water Use Licence Application Technical Report dated April 2009, compiled by Geovicon Environmental (Pty) Ltd.
- (ii) Integrated Waste and Water Management Plan for the Fairview Operation dated March 2013, compiled by SLR Global Environmental Solutions.
- (iii) Barberton Mines (Pty) Ltd Social and Labour Plan dated June 2013, compiled by Barberton (Pty) Ltd.
- (iv) Fairview Mine Water Use Licence Amendment Application dated November 2013, compiled by Synergistic Environmental Services (Pty) Ltd.
- (v) Geotechnical Report Barberton Tailings Re-Treatment Project dated September 2012, compiled by K. Schwartz.
- (vi) Barberton Tailings Re-Treatment Project New Bramber Tailings Storage Facility – Design Report dated October 2013, compiled by Stefanutti Stocks.
- (vii) Fairview Mine Water Quality Report dated April 2010, compiled by Geovicon Environmental (Pty) Ltd.
- (viii) Barberton Mines (Pty) Ltd Annual Water Quality Monitoring Reported dated February 2011 – January 2012, compiled by Synergistic Environmental Services (Pty) Ltd.
- (ix) Barberton Mine Groundwater Pollution Prediction dated March 2011, compiled by Metago.
- (x) Barberton Mines Acid Base Accounting dated April 2011, Compiled by Metago
- (xi) Barberton Mines (Pty) Ltd Fairview Gold Mine Aquatic Biomonitoring dated October 2013, compiled by Nepid Consultants.
- (xii) Barberton Mines Storm Water Management Plan Scoping Report dated February 2013, compiled by SLR Global Environmental Solutions.
- (xiii) Geochemical, Hydrochemical and Toxicity Testing at Barberton Mines dated March 2013, compiled by Jones & Wagner.
- (xiv) Rehabilitation Strategy and Implementation Programme for Barberton Mines dated March 2013, compiled by SLR Global Environmental Solutions.
- (xv) Geotechnical Report on Cyclone Test Work Executed on Barberton Biox / Float Tailings for the proposed TSF dated 2012, compiled by Stefanutti Stocks.
- (xvi) Geotechnical Report on Cyclone Test Work Executed on Barberton Biox / Float Tailings for the proposed TSF dated 2013, compiled by Stefanutti Stocks, as well as other related documentations and communication (emails, letters, verbal, etc) related to.

6. Description of the activity

The licence authorises Barberton Mines (Pty) Ltd: Fairview Mine to undertake section 21 (a, b, e, f, g, & J) water uses of the National Water Act, 1998 (Act 36 of 1998) to reclaim Mine tailings and to continue mining to the current life of Mine plan. The project will allow for the consolidation of all tailings into a single, newly constructed tailings storage facility (TSF).

Inkomati Usuthu Catchment
Management Agency
Private Bag X 11214
Nelspruit 1200

APPENDIX I

CONDITIONS FOR ALL WATER USES

1. This licence is subject to all applicable provisions of the National Water Act, 1998 (Act 36 of 1998).
2. The responsibility for complying with the provisions of the licence is vested in the Licensee and not any other person or body.
3. The Licensee must immediately inform the CEO of any change of name, address, premises and/or legal status.
4. If the property in respect of which this licence is issued is subdivided or consolidated, the Licensee must provide full details of all changes in respect of the properties to the CEO within sixty (60) days of the said change taking place.
5. If a water user association is established in the area to manage the resource, membership of the Licensee to this association is compulsory and rules, regulations and water management stipulations of the association must be adhered to.
6. The Licensee shall be responsible for any water use charges or levies, which may be imposed from time to time by the CEO in terms of the Department's Raw Water Pricing Strategy.
7. While effect must be given to the reserve as determined in terms of the Act, where a desktop determination of the reserve has been used in issuance of a licence, when a comprehensive determination of the reserve has finally been made it shall be given effect to.
8. The licence shall not be construed as exempting the Licensee from compliance with the provisions of any other applicable Act, Ordinance, Regulation or By-law.
9. The licence and amendment of this licence are also subject to all the applicable procedural requirements and other applicable provisions of the Act, as amended from time to time.
10. The Licensee shall conduct an annual internal audit on compliance with the conditions of licence. A report on the audit shall be submitted to the CEO within one month of the finalisation of the audit.
11. The Licensee shall appoint an independent external auditor to conduct an annual audit on compliance with the conditions of this licence. The first audit must be conducted within 6 (six) months after the issuance of this licence. A report on the audit shall be submitted to the CEO within one month of finalisation of the report.
12. Flow metering, recording and integrating devices shall be maintained in a sound state of repair and calibrated by a competent person at intervals of not more than two years. Calibration certificates shall be available for inspection by the CEO or his/her representative upon request.
13. Any incident that causes or may cause water pollution shall be reported to the CEO or his/her designated representative within 24 hours.
14. Licensee shall use water efficiently to minimise total water intake, avoid usage of water where possible, implement "good" housekeeping and operating practices, and maximise the reuse /recycle of contaminated water.

15. If the Licensee is not the end user/beneficiary of the water use related infrastructure and will not be responsible for long term maintenance and management of the infrastructure, the Licensee shall provide a programme for hand over to the successor-in-title including a brief management/maintenance plan and the agreement for infrastructure along with allocation of responsibilities, within three (3) months of the date of issuing of this licence.

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APPENDIX II

Section 21 (a) of the Act: Taking water from a water resource

1. This licence authorizes Barberton mines (Pty) Ltd: Fairview mine for the abstraction of water quantity indicated in Table 2.

Table 2: Quantity of water to be abstracted

Purpose	Properties	Volume of water to be abstracted	Co-ordinates	
Abstraction from the borehole to supply mine's village, mine's plant, offices, clinic, workshops, stores, hostels, change houses and Barberton Gold (Pty) Ltd with domestic water.	Remaining extent of Fairview 708 JU.	142 350 m ³ /a	25°43'35.6" S	31°03'56.3" E
Abstraction from Suid Kaap River to supply mine's village, mine's plant, offices, clinic, workshops, stores, hostels, change houses and Verulam community with domestic water.	Remaining extent of Hayward 310 JU.	521 500 m ³ /a	25°42'01.0" S	31°04'26,2"E
Abstraction from Hyslops Creek to supply mine's village, mine's plant, offices, clinic, workshops, stores, hostels, change houses with domestic water.	Greenstone 917 JU Ptn 82	175 000 m ³ /a. 74 420 m ³ /a of this volume is the ELU, water- right grant No.133/09	25°44'55.8" S	31°04'36,5" E
Abstraction of groundwater from a borehole for remediation purpose i.e. interception of pollution plume from the old rousting plant footprint.	Remaining extent of Fairview 708 JU	19 345 m ³ /a	25°44'07.3" S	31°04'52.4" E
		19 345 m ³ /a	25° 43' 58.86" S	31°09'22.2" E
		19 345 m ³ /a	25°44'01.6" S	31°04'49.1" E
Abstraction of groundwater using scavenger boreholes along the Loubshers Creek for remediation purpose i.e. interception of pollution plume from the Loubshers. The abstracted water is used	Bramber South 349 JU.	10 164 m ³ /a	25°43'06.0" S	31°03'35.5"E
		3 390 m ³ /a	25°43'16.1" S	31°03'47.3" E
		44 664 m ³ /a	25°43'08.8 S	31°03'34.5" E
		72 792 m ³ /a	25°43'08.8" S	31°03'34.5" E
		14 000 m ³ /a	25°43'11.8" S	31°03'41.3" E

Purpose	Properties	Volume of water to be abstracted	Co-ordinates	
in the BTRP.		3 000 m ³ /a	25°43'08.9" S	31°03'37.2" E
Abstraction of groundwater from a borehole to irrigate 2 ha of the local community vegetable garden (project).	Remaining extent of Fairview 708 JU	2 047 m ³ /a	25°44'23.9" S	31°03'55.8" E
Taking of water found underground at Fairview mine for Tailings reworking.	Section A Kaap Block Lot 123.	779 202 m ³ /a	25°43'55,8"S	31°06'01.7"E
Taking of water found underground at New Consort mine for Tailings reworking at Fairview Mine.	Lot 191, Lot 192, Lot 103 and Remaining Extent of the Farm Segala 306 JU.	657 000 m ³ /a	25°39'13.0" S	31°04'01.3" E

- 1.1. The quantity of water authorized to be taken in terms of this licence may not be exceeded without prior authorization by the Minister.
- 1.2. This licence does not imply any guarantee that the said quantities and qualities of water will be available at present or at any time in the future.
- 1.3. The above mentioned volume may be reduced when the licence is reviewed.
- 1.4. The quantity of water abstracted should be measured on a daily basis and the total should also be measured every last day of the month and the result should be submitted to the CEO.
- 1.5. The Licensee shall continually investigate new and emerging technologies and put into practice water efficient devices or apply technique for the efficient use of water containing waste, in an endeavour to conserve water at all times.
- 1.6. No water taken may be pumped, stored, diverted, or alienated for purpose other than intended in this licence, without written approval by the Minister or his/her delegated nominee.
- 1.7. The Licensee shall install and monitor appropriate water measuring devices to measure the amount of water abstracted, received and/or consumed, as applicable to the infrastructure.
- 1.8. Notices prohibiting unauthorized persons from entering certain areas, as well as internationally acceptable signs indicating the risks involved in case of an unauthorized entry must be displayed along the boundary fence of these areas.
- 1.9. The Licensee shall ensure that all measuring devices are properly maintained and in good working order and must be easily accessible. This shall include a programme of

checking, calibration, and/or renewal of measuring devices.

- 1.10. The Department accepts no liability for any damage, loss or inconvenience, of whatever nature, suffered as a result of:
 - 1.10.1. Shortage of water;
 - 1.10.2. Inundations or flood;
 - 1.10.3. Siltation of the resource; and
 - 1.10.4. Required reserve releases.
- 1.11. The Licensee shall establish a programme of formal Information Management System, which maintains a database on water supply, distribution and delivery infrastructure.
- 1.12. The Licensee shall establish and implement a continual process of raising awareness amongst itself, its workers and stakeholders for the need to for Water Conservation and Water Demand Management.

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APPENDIX III

Section 21(b) of the Act: Storing of water

Storage of Water

- 1.1 The licensee is authorised to store a maximum quantity of water as indicated in Table 3.

Table 3: Quantity of water to be stored

Activity	Property description	Volume of water to be stored	Capacity (m ³)	Co-ordinates
Storage of portable water into underground reservoir.	Section A Kaaop Block Lot 123	624 150 m ³ /a	1.2 Million	25°43'57.0" S 31°06'03.1" E

- 1.2 The licensee must obtain any proprietary rights or servitudes at his own cost.
- 1.3 The Licensee is not exempted from compliance with any applicable Dam Safety Regulations.
- 1.4 No additional water storage facilities can be constructed on the property without prior written consent of the Minister or responsible authority.

2. Monitoring Requirements

- 4.1 The licensee is not indemnified from any detrimental effect that the underground reservoir may have on other properties. The Department does not accept any responsibility or liability for any damages or losses that may be suffered by any other party as a result of the construction and utilisation of the underground reservoir.
- 5.1 The licensee shall establish a monitoring programme and the date and time of monitoring in respect of each sample taken shall be recorded together with the results of the analysis as well as other significant information (pollution incident, etc.).
- 6.1 The quantity of water stored shall be recorded as at the last day of each month.

3. Dam Safety Requirements

- 3.1 The construction, operation, and maintenance of all dam facilities classified as a dam with a safety risk, must be carried out under supervision of a Professional Civil Engineer, registered under the Engineering Profession of South Africa Act, 1990 (Act 114 of 1990).
- 3.2 All storage facilities (for water not containing waste) with a safety risk will comply to the following control measures:
- 3.3 The licensee shall supply any information, drawings, specifications, design assumptions, calculations, documents and test results when requested by the CEO.
- 3.4 An approved professional person must be appointed to carry out a dam safety evaluation annually and must:
- 3.4.1 Consider whether the safety norms pertaining to the design, construction, monitoring, operation, performance and maintenance of the dam satisfy acceptable dam engineering practices.

- 3.4.2 Compile a report on the matters contemplated above according to the prescribed requirements and submit the signed and dated report to the owner of the dam within the prescribed period.
- 3.5 The licensee is not exempted from compliance with the provisions of the Regulations published under Government Notice R1560 of 25 July 1986, read with Chapter 12 of the Act.
- 4. Construction of Dam(s)**
- 4.1 Construction of the dam(s) may not commence before authorisation in terms of the Environment Conservation Act, 1989 (Act 73 of 1989) is issued.
- 4.2 The Government reserves the right to construct storage works at any time in any stream and to store all surplus water reaching the dam(s) and to control the allocation of such water.
- 4.3 Construction of the dam(s) may not commence unless the required authorisation to build has been issued by the Dam Safety Office of this Department.

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APPENDIX IV

Section 21(e) of the Act: Engaging in a Controlled Activity; Irrigation of any Land with Waste or Water Containing Waste

1. QUANTITY OF WATER CONTAINING WASTE FOR IRRIGATION

- 1.1 This licence authorises the disposal to irrigated land with a maximum quantity of water per annum as indicated in Table 4.

Table 4: Water use activity

Activity	Property description	Volume of water containing waste to be irrigated	Co-ordinates	
Irrigation Rehab: Irrigation to leach out the Arsenic Roasting plant footprint.	Remaining extent of Fairview 708 JU	31 390 m ³ /a	25°43'57.0" S	31°06'03.1" E

- 1.2 The quantity of wastewater authorised to be irrigated in terms of this licence may not be exceeded without prior authorisation by the Minister.

2. CROP TYPE AND AREA IRRIGATED

- 2.1 This licence authorises to irrigate a total surface area of 2 Ha of artificial pasture, trees and shrub on the properties according to agreement.

3. QUALITY OF WATER CONTAINING WASTE

- 3.1 The quality of the water containing waste irrigated may not exceed the following non-exceedance values or range as indicated in table 5.

Table 5: Water quality limits to be irrigated

VARIABLE	LIMIT
pH	6.5 – 8.4
Electrical Conductivity	200 mS/m
Ortho-Phosphate (as PO ₄)	0.125 mg/l
Sulphate (as SO ₄)	250 mg/l
Arsenic (as As)	0.02 mg/l
Cyanide (as Cn)	0.004 mg/l
Chloride (as Cl)	30 mg/l
Flouride (as F)	0.9 mg/l
Iron (as Fe)	0.1 mg/L
Magnesium (as Mg)	58 mg/l
Total Dissolved Solids (as TDS)	688 mg/l

- 3.2 Each sample shall be analysed according to condition 5 of Appendix VI for the variables indicated in table 5.

4. MONITORING

- 4.1 The quantity of water containing waste irrigated shall be metered and recorded daily.
- 4.2 The quality of waste or water containing waste shall be monitored monthly at the outlet of the irrigation point.
- 4.3 Monitoring for the quantity of the water containing waste for irrigation shall be done at the point where the effluent is piped into the irrigation dam.
- 4.4 Flow metering, recording and integrating devices shall be maintained in a sound state of repair and calibrated by a competent person at intervals of not more than two years. Calibration certificates shall be available for inspection by the CEO or his representative upon request.
- 4.5 The monitoring point/s shall not be changed without prior notification to and written approval by the CEO.
- 4.6 A monitoring program to determine compliance with the ground water quality reserve on the property/properties must be designed in consultation with the affected parties.

5. REPORTING

- 5.1 The information required in terms of condition 3 shall be submitted quarterly to the CEO, under reference 27/2/2/X23F/071, within one month of the close of the period concerned.

6. GENERAL IRRIGATION PRACTICES

- 6.1 Irrigation shall be practised in accordance with the guidelines prescribed in the document titled "*Guide: Permissible Utilisation and Disposal of Treated Sewage Effluent*", issued by the former Department of Health under reference 11/2/5/3 and dated 30 May 1978, or in accordance with any relevant regulations promulgated under section 26 of the Act.
- 6.2 Irrigation with waste shall be practiced in a systematic manner and precautions shall be taken so as to prevent –
 - 6.2.1 water logging and pooling of waste in any location;
 - 6.2.2 pollution of underground water or surface water due to seepage or otherwise;
 - 6.2.3 fly breeding, public health hazard, odour or secondary pollution;
 - 6.2.4 runoff from the irrigation area because of wet weather or any other conditions whatsoever; and
 - 6.2.5 The site of the irrigation area shall be adequately fenced to prevent the entry of animals and unauthorised persons.
- 6.3 Notices manufactured of durable weatherproof material prohibiting unauthorised entry and warning against the use of water containing waste for drinking and washing purposes shall be displayed at prominent places along the fence and at entrance gates. Such notices shall be worded in the official languages applicable in the area.

7. PIPELINES

- 4.1 The pipelines used for the conveyance of waste shall be painted in a conspicuous colour or manufactured of a coloured material distinctly different from the colour of the pipelines in which drinking water is flowing to avoid the possibility of any cross-connections of the different pipelines.

- 7.2 All stop-valves and taps on the pipelines conveying the effluent shall be of a type that can be opened and closed by means of a loose wrench. This wrench shall be in the safekeeping of a responsible member of the staff to prevent unauthorised use thereof.
- 7.3 Notices manufactured of a durable weatherproof material warning against the use of water containing waste for drinking and washing purposes shall be displayed at prominent places where the waste is being reused and at all taps. Such notices shall be worded in the official languages applicable in the area.

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APPENDIX V

Section 21(f) of the Act: Discharging waste or water containing waste into a water resource

1. QUANTITY OF WATER CONTAINING WASTE

1.2.1 This licence authorises the discharge of water containing waste to the Olifantskloof Creek of a maximum quantity of water per annum as indicated in Table 6.

Table 6: Quantity of water to be discharged

Activity	Property Description	Volume of water to be discharged	Co-ordinates	
Discharge of excess underground water for continuation of mining into Olifantskloof Creek.	Remaining extent of Fairview 708 JU	262 435 m ³ /a	25° 43'55.8" S	31° 06'01.7" E
Discharge of excess underground water from process water tank and overflow from treatment plant backwash into Olifantskloof Creek.	Remaining extent of Fairview 708 JU	115 304 m ³ /a	25° 43'56.8" S	31° 04'23.6" E

2. QUALITY OF WATER CONTAINING WASTE

2.1 The quality of water containing waste discharged into the Olifantskloof Creek may not exceed the non-exceedance values or range in table 7:

Table 7: Water quality limits to be discharge into the Olifantskloof Creek

VARIABLE	LIMIT
pH	6.5 – 8.4
Electrical Conductivity	200 mS/m
Ortho-Phosphate (as PO ₄)	0.125 mg/l
Sulphate (as SO ₄)	250 mg/l
Arsenic (as As)	0.02 mg/l
Cyanide (as Cn)	0.004 mg/l
Chloride (as Cl)	30 mg/l
Flouride (as F)	0.9 mg/l
Iron (as Fe)	0.1 mg/L
Magnesium (as Mg)	58 mg/l
Total Dissolved Solids (as TDS)	688 mg/l

3. MONITORING

3.1 Quantity

3.1.1 The quantity of waste discharged into the Olifantskloof Creek shall be metered and recorded daily.

3.1.2 Monitoring for the quantity of waste shall be done at the point where the waste is discharged into the Olifantskloof Creek

3.1.3 Flow metering, recording and integrating devices shall be maintained in a sound state of repair and calibrated by a competent person at intervals of not more than two years. Calibration certificates shall be available for inspection by the

3.2 Quality of waste

3.2.1 The quality of the waste shall be monitored by taking grab samples every week at the monitoring points described in condition 4.1.2 of Appendix V. Each sample shall be analysed according to condition 5 of Appendix VI for the following variables as indicated in table 8:

Table 8: Water quality parameters relevant for sampling

VARIABLE	UNIT
pH	in pH units
Electrical Conductivity	in mS/m
Sulphate (as SO ₄)	in mg/l
Arsenic (as As)	in mg/l
Cyanide (as Cn)	in mg/l
Chloride (as Cl)	in mg/l
Flouride (as F)	in mg/l
Iron (as Fe)	in mg/l
Magnesium (as Mg)	in mg/l
Total Dissolved Solids (as TDS)	in mg/l

and/or any other variable as may be required from time to time by the CEO.

3.3 The date, time and monitoring point in respect of each sample taken shall be recorded together with the results of the analysis.

4. MONITORING POINTS

4.1 Monitoring for quality and flow shall only be carried out at the monitoring points listed below:

4.1.1 Monitoring points for flow:

4.1.1.1 at the waste discharge point of the workshop dam at the geographic position S 25° 43' 56.8" E 31° 04' 23.6" and the waste discharge point of the 11 Edit at the geographic position S 25° 43' 55.8" E 31° 06' 01.7".

4.1.2 Monitoring points for quality:

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- 4.1.2.1 at the outlet point of the workshop dam at the geographic position S 25° 43' 56.8" E 31° 04' 23.6" and 11 Edit at the geographic position S 25° 43' 55.8" E 31° 06' 01.7" where the waste is discharged into the Olifantskloof Creek.
- 4.1.2.2 in the Olifantskloof Creek at upstream and downstream of the discharge points. Monitoring points must be identified in consultation with the CEO.
- 4.2 The monitoring points shall not be changed without prior notification to and written approval by the CEO.

5. REPORTING

- 5.1 The information required in terms of condition 3 of Appendix V shall be submitted quarterly to the CEO, under reference 27/2/2/X23F/071, within one month of the close of the period concerned.

6. STORMWATER DISPOSAL

- 6.1 Storm water leaving the mining activity premises shall in no way be contaminated by any substance, whether such substance is a solid, liquid, vapour or gas or a combination thereof which is produced, used, stored, dumped or spilled on the premises.

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APPENDIX VI

Section 21 (g) of the Act: Disposing of waste in a manner which may detrimentally impact on a water resource

1. DISPOSAL OF WASTE OR WATER CONTAINING WASTE

1.1 The Licensee is authorised to dispose of a maximum quantity of waste or water containing waste into the waste management facilities on the properties described in Table 9.

Table 9: Waste Management Facilities

Purpose	Properties	Quantity of waste or wastewater	Co-ordinates	
Disposal of rainfall runoff water; overflow from potable treatment backwash into workshop dam.	Remaining extent of Fairview 708 JU.	153 300 m ³ /a	25°43'55.3" S	31°03'21.8" E
Disposal of tailings into Bramber Storage Tailings Facility.	Remaining extent of Fairview 708 JU.	21 900 tons/a	25° 43' 35.6" S	31°03' 56.3" E
Disposal of tailings at Bramber Extension Tailings facility.	Remaining extent of Fairview 708 JU.	156 950 tons/a	25° 43' 40.2" S	31°04' 02.5" E
Disposal of supernatant water from Bramber TSF to the Bramber return dam.	Remaining extent of Fairview 708 JU.	18 250 m ³ /a	25° 43' 40.2" S	31°04' 02.5" E
Disposal of supernatant water BTRP return water dam into the Bramber extension return water dam.	Remaining extent of Fairview 708 JU.	87 235 m ³ /a	25° 43' 34.1" S	31°03' 58.1" E
Emergency dam to dispose supernatant water from the remaining of Bramber TSF.	Remaining extent of Fairview 708 JU.	17 800 m ³	25° 43' 48.8" S	31°03' 45.6" E
Disposal of tailings into new Bramber Tailings Storage Facility.	Bramber south 349 JU	1 241 000 tons/a	25°43'30.8" S	31°03'42,9" E

Purpose	Properties	Quantity of waste or wastewater	Co-ordinates	
Disposal of supernatant water from new Bramber Tailings Storage Facility into the new Bramber return water dam.	Bramber south 349 JU	1 204 500 m ³ /a	25°43'55.8" S	31°06'01.7" E
Disposal of water found underground from New Consort mine shafts into workshop dams to be reused in the plants (BTRP and Biox plant).	Remaining extent of Fairview 708 JU.	657 000 m ³ /a	25°43'34.1" S	31°03'58.1" E
Disposal of water found underground from Fairview Mine (surplus water after the mill tanks) to the workshop dams.	Remaining extent of Fairview 708 JU.	300 000 m ³ /a	25° 43' 55.3" S	31° 03' 21.8" E
Disposal of treated sewage waste water.	Worrall 352 JU	70 304 m ³ /a	25°43'32.4" S	31°04'08.3" E

1.2 The quantity of waste or water containing waste authorised to be disposed of in terms of this licence may not be exceeded without authorisation from CEO as stated in section 50 of the Act.

2. CONSTRUCTION, OPERATION AND MAINTANANCE

2.1 All facilities constructed to manage clean and dirty storm water, seepage and or process water must be constructed as per the proposed designs reflected in the reports.

2.2 The process dam systems must be operated under appropriate supervision and maintained in such a manner as to ensure that:

2.2.1 Wave action created by wind does not erode the inner sides of the pond walls;

2.2.2 A minimum freeboard of 0.8 meters be maintained for the mine residue facility return water dam above the expected maximum water level which is based on the average monthly rainfall figure for the catchment area concerned, plus the maximum precipitation to be expected over a period of 24 hours with a frequency of once in every 50 years, less the gross mean evaporation for the area; and

2.2.3 If, in the opinion of the CEO, the return water dams fail to meet the requirements of this licence or otherwise constitutes a water pollution hazard, the Licensee must take such appropriate steps as may be deemed necessary by the CEO.

2.2.4 Contour walls or furrows must be provided around the waste management facility system to prevent storm-water ingress or erosion of the waste management facilities and any wastewater from entering any river or stream.

- 2.3 The construction, operation and maintenance of all dam facilities classified, and those not classified, as a dam/(s) with a safety risk, must be carried out under supervision of a Professional Civil Engineer, registered under the Engineering Profession of South Africa Act, 1990 (Act 114 of 1990).
- 2.4 The relevant components of the water management system, of which the dam facilities are an integral part, must be designed to retain the run-off for a 24-hour duration storm event with a 50-year recurrence interval maintaining a minimum freeboard of 0.8 metres. The capacity shall be over and above the operating capacity.
- 2.5 The Licensee must implement the following erosion protection measures:
- 2.5.1 The slopes of the Return Water Dam and Tailings Storage Facility must be vegetated as soon as practically possible with appropriate seed mix.
- 2.5.2 All disturbed areas must be vegetated as soon as practically possible with appropriate vegetation. Areas that fail to establish vegetation cover must be re-seeded immediately.
- 2.5.3 Where disturbed areas cannot be vegetated during the life operations of the dam, erosion control measures must be implemented on all slopes exceeding 2% and engineered control measures on all slopes exceeding 15%.
- 2.5.4 Alien vegetation must not be allowed to colonise the area and all new alien vegetation recruitment must be eradicated or controlled, using standard methods approved by the Department.
- 2.5.5 Loose sack gabions (biodegradable sacks filled with soil and *Cynodon dactylon* seed) must be placed within and/or around eroded areas.
- 2.5.6 The erosion zone must be backfilled and seeded with appropriate seed mix, which will predominantly consist of creeping grasses.

3. QUALITY OF WASTE OR WATER CONTAINING WASTE TO BE DISPOSED

- 3.1 The quality of waste or water containing waste to be disposed into Tailing Storage Facility and Return Water Dams may not exceed limits specified in Table 10.

Table 10: Quality of waste or water containing waste to be disposed

VARIABLE	LIMITS
pH	6.5 – 8.4
Electrical Conductivity	1 060 mS/m
Sulphate (as SO ₄)	8 434 mg/l
Arsenic (as As)	0.79 mg/l
Chloride (as Cl)	754 mg/l
Flouride (as F)	14 mg/l
Iron (as Fe)	7 mg/l
Sodium (as Na)	1 183 mg/l
Magnesium (as Mg)	2 007 mg/l
Total Dissolved Solids (as TDS)	14 404 mg/l

4. MONITORING

4.1 Surface water monitoring

4.1.1 The Licensee shall monitor surface water on monthly basis at the monitoring points described in Table 11 by taking grab samples.

Table 11: Surface water monitoring points for Fairview Mine

Monitoring Point I.D	Description	Co-ordinates	
FWSP 1	Fairview adit outflow.	25° 43' 54.48" S	31° 06' 0.36" E
FWSP 3	Olifantskloof Creek after old tailings dumps.	25° 43' 57.6" S	31° 05' 47.16" E
FWSP 4	Olifantskloof Bridge at security gate.	25° 43' 59.22" S	31° 04' 20.34" E
FWSP 8	Caledonian bridge (Suid-kaap river downstream from Fairview).	25° 42' 47.4" S	31° 03' 30.5" E
FWSP 9	Bramber return water dam.	25° 43' 46.32" S	31° 03' 50.4" E
FWSP 10	Loubshers creek Bridge Barberton to Kaapmuiden.	25° 43' 1.62" S	31° 03' 32.58" E
FWSP 11	Hyslops creek Bridge Fairview Bton (Hydro 14 streams).	25° 43' 26.4" S	31° 03' 55.6" E
FWSP 12	Olifants/ Hyslops after confluence. Bridge Bton/ Kaapmuiden.	25° 43' 28.86" S	31° 03' 20.94" E
FWSP 13	Workshop dam.	25° 43' 55.3" S	31° 03' 21.8" E
FWSP 14	Olifantskloof downstream Tailings dams.	25° 43' 56.7" S	31° 03' 55.68" E
FWSP 15	Bramber extension return water dam.	25° 43' 34.1" S	31° 03' 58.1" E
FWSP 16	Upstream Fairview.	25° 43' 03.2" S	31° 02' 30.7" E
FWSP 17	Sewage from new plant.	25° 43' 30.8" S	31° 03' 42.9" E
FWSP 18	BTRP return water dam.	25° 43' 47.1" S	31° 03' 51.6" E
FWSP 19	BTRP Tailings Storage Facility.	25° 43' 30.8" S	31° 03' 42.9" E

4.2 Groundwater Monitoring

4.2.1 The Licensee shall monitor groundwater quality on a quarterly basis at the monitoring points described in Table 12.

Table 12: Groundwater monitoring points for Fairview Mine

Monitoring Point I.D	Description	Co-ordinates	
B2	Clinic Parking scavenger borehole below plant.	25° 44' 0.9" S	31° 4' 29.46" E
B3	Scrap yard scavenger borehole below plant.	25° 44' 4.32" S	31° 04' 31.44" E

Monitoring Point I.D	Description	Co-ordinates	
B 4	Scavenger boreholes below stores.	25° 44'00.6" S	31°04'23.5" E
B6	Olifantskloof scavenger borehole at security gate.	25° 43'58.86" S	31°04'21.9" E
B9	Bramber tailings dam.	25°43'53.16" S	31°04'12.76" E
B10	Downstream Bramber tailings Olifantskloof.	25°43'55.5" S	31°04'7.56" E
B14	South East of Return Water Dam.	25°43'51.18" S	31°03'50.46" E
B17	Downstream Bramber Return Water Dam.	25°43'48.6" S	31°03'45.36" E
B18	Downstream Bramber tailings dump.	25°43'47.1" S	31°03'51.6" E
B19	Loubshers Creek below Bramber & moon dump.	25°43'31.08" S	31°04'6.36" E
B22	Next to Fairview Kaapmuiden road Bramber East & moon dump.	25°43'34.32" S	31°04'11.76" E
B23	Next to Fairview Kaapmuiden road Bramber east & moon dump.	25°43'35.16" S	31°04'12.66" E
B24	Next to Fairview Kaapmuiden road Bramber East & moon dump.	25°43'42.96" S	31°04'15.3" E
B25	North East Bramber Ext TSF.	25°43'30.1" S	31°04'00.1" E
B26	Next to Fairview Kaapmuiden road.	25°43'17.5" S	31°03'55.9" E
B27	Next to Fairview Kaapmuiden road 300 metres from Barberton Kaapmuiden T Junction.	25°43'08.8" S	31°03'48.6" E
B28	Barberton Kaapmuiden road next to loubshers Creek.	25°43'06.9" S	31°03'31.5" E
B29	Barberton Kaapmuiden road between to Loubshers Creek and Olifants Creek.	25°43'21.8" S	31°03'28.6" E
B30	Loubshers Creek below Bramber & moon dump.	25°43'29.41" S	31°03'18.7" E
B31	Bramber farm adjacent to R 38.	25° 43' 14.1" S	31° 03' 12.5" E
B 32	Bramber farm adjacent to R 38 scavenger borehole.	25° 43' 0.39" S	31° 03' 30.6" E
B 33	Bramber farm adjacent to R 38.	25° 42'56.07" S	31° 03' 50.7" E
B 34	Barberton scavenger borehole.	25° 43' 15.6" S	31° 03' 50.7" E

Monitoring Point I.D	Description	Co-ordinates	
B 35	Barberton scavenger borehole.	25° 43'16.1" S	31° 03' 47.3" E
B 37	Barberton scavenger borehole.	25° 43'08.8 S	31° 03'34.5" E
B 38	Barberton scavenger borehole.	25° 43'08.8" S	31° 03'34.5" E
B 39	Barberton scavenger borehole.	25° 43'08.9" S	31° 03'37.2" E
B 40	Barberton scavenger borehole.	25° 43'11.8" S	31° 03'41.3" E
B 41	Barberton scavenger borehole.	25° 43'13.7" S	31° 03'42.8" E
B 42	Barberton scavenger borehole.	25° 43'19.7" S	31° 03'30.9" E

- 4.2.2 The Licensee shall in consultation with the CEO establish additional groundwater monitoring points deemed necessary to monitor impacts of new Bramber Tailings Storage Facilities on groundwater within 6 months of the issuance of the licence.
- 4.2.3 Impact of scavenger boreholes on the regional groundwater levels should be studied, modelled and submitted to the CEO for recommendation within a year of licence issuance.
- 4.2.4 Pollution migration model should be updated yearly with enough data coming in from the quarterly monitoring program.
- 4.2.5 Monitoring boreholes must be clearly marked and numbered, and must be equipped with lockable caps. The Department reserves the right to sample monitoring boreholes at any time and to analyse these samples, or to have samples taken and analysed.
- 4.2.6 The monitoring programme must include rainfall and tailings deposition on a daily basis and groundwater level monitoring on a monthly basis.
- 4.2.7 The frequency of sampling shall not be changed prior to notification and written approval by the CEO.
- 4.2.8 The Licensee shall use acknowledged methods for borehole sampling and the date, time, sampler and borehole number must be indicated for each sample.
- 4.2.9 The Licensee shall make provision for the sampling of any additional monitoring requirements that might be required from time to time as specified by the CEO.
- 4.2.10 No groundwater abstraction may take place within 100m of river, spring or wetland. This distance may be increased by CEO if deemed necessary.
- 4.2.11 An agreement for sewage sludge disposal between the mine and the owner of the licensed wastewater treatment works must be submitted to the CEO within 30 days of the licence issuance.
- 4.3 The following water quality variables (constituents) must be included in both groundwater the surface water monitoring programme:

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Table 13: Water quality variables to monitored

VARIABLE	UNIT
pH	in pH units
Electrical Conductivity	in mS/m
Total Dissolved Solids	in mg/l
Alkalinity	in mg/l
Ammonia (as N)	in mg/l
Nitrate (as N)	in mg/l
Nitrite (as N)	in mg/l
Chloride (as Cl)	in mg/l
Sulphate (as SO ₄)	in mg/l
Sodium (as Na)	in mg/l
Calcium (as Ca)	in mg/l
Magnesium (as Mg)	in mg/l
Aluminium (as Al)	in mg/l
Arsenic (as As)	in mg/l
Cyanide (as Cn)	in mg/l
Iron (as Fe)	in mg/l
Manganese (as Mn)	in mg/l
Total Dissolved Solids (as TDS)	in mg/l

- 4.4 The registered professional Aquatic Scientist must establish a monitoring programme for the following indices: Invertebrate Habitat Assessment System (IHAS) and the latest SASS (South African Scoring System). Sampling must be done once during summer season and once during the winter season, annually, to reflect the status of the river upstream and downstream of the mining activities.
- 4.5 Water quality testing to be performed on the new Bramber return water dam, new Bramber Storage Facility on a monthly basis in order to determine the risks to the receiving environment. The data gathered in the investigation must be reported annually to the CEO. If any concentrations levels as specified in table 10 are exceeded. The licensee must institute an investigation to determine the cause of the poor water quality.
- 4.6 The date, time and monitoring point in respect of each sample taken shall be recorded together with the results of the analysis.

5. METHODS OF ANALYSIS

- 5.1 Analyses for water quality samples shall be carried out in accordance with methods prescribed by and obtainable from the South African Bureau of Standards, in terms of the Standards Act, Act 30 of 1982.
- 5.2 The methods of analysis shall not be changed without prior notification to and written approval by the Minister or delegated nominee.

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6. INCIDENT MONITORING

- 6.1 In the event that emergency incident results in pollution of water resource, the Licensee shall report the incident to the CEO within 24 hours, monitor the water quality and the incident report shall be submitted to the CEO within fourteen (14) days.

7. REPORTING

- 7.1 The Licensee shall update the water balance annually and calculate the loads of waste emanating from the activities. The Licensee shall determine the contribution of their activities to the mass balance for the water resource and must furthermore co-operate with other water users in the catchment to determine the mass balance for the water resource reserve compliance point.
- 7.2 The Licensee shall submit the results of analysis for the monitoring requirements to the CEO on a quarterly basis under Reference number 27/2/2/X23F/071.

8. STORMWATER MANAGEMENT

- 8.1 Storm-water leaving the Licensee's premises shall in no way be contaminated by any substance, whether substance is a solid, liquid, vapour or gas or a combination thereof which is produced, used, stored, dumped or spilled on the premises.
- 8.2 Increased runoff due to vegetation clearance and/or soil compaction must be managed, and steps must be taken to ensure that storm-water does not lead to bank instability and excessive levels of silt entering the stream.
- 8.3 Storm-water shall be diverted from the mine complex site and roads shall be managed in such a manner as to disperse runoff and concentrating the storm-water flow.
- 8.4 Where necessary, works must be constructed to attenuate the velocity of any storm-water discharge to protect the banks of the affected watercourses.
- 8.5 Storm-water control works must be constructed, operated and maintained in a sustainable manner throughout the impacted area.
- 8.6 The polluted storm-water system shall be designed and implemented to provide suitable routing and pumping capacity for contaminated storm-water from individual facilities to the respective storm-water dams in accordance with the design specifications as contained in the Integrated Water Use License Application report.
- 8.7 The polluted storm-water captured shall be recycled and reused.
- 8.8 The Licensee shall submit a detailed storm-water management plan as prescribed in the Best Practices Guideline: G1 to the CEO within six months of the date of issuance for approval.
- 8.9 All seepage produced by the pollution control dams, must be collected in subsoil and surface seepage interception drains and containment works.
- 8.10 No seepage or contaminated runoff water may be discharged to a watercourse or environment.

9. ACCESS CONTROL

- 9.1 The Licensee must ensure effective access control on the mine residue facility to reasonably prevent entry of domestic animals, game and unauthorised persons while the solid waste disposal sites are operative and during the period of construction for closure.

- 9.2 Notices prohibiting unauthorised persons from entering the mine residue facility, as well as an internationally accepted signs indicating the risks involved in unauthorised entry must be displayed at suitable intervals along the boundary fence of these areas.
- 9.3 The Licensee must take all reasonable steps to maintain service roads in a condition which ensures unimpeded access to the mine residue facility for vehicles involved in closure construction and/or transporting waste and must keep these roads free of waste.
- 9.4 The Licensee must ensure that all entrance gates are manned during the hours of operation/closure construction and locked outside the hours of operational/closure construction.

10. CONTINGENCIES

- 10.1 Accurate and up-to-date records shall be kept of all system malfunctions resulting in non-compliance with the requirements of this licence. The records shall be available for inspection by the CEO upon request. Such malfunctions shall be tabulated under the following headings with a full explanation of all the contributory circumstances:

10.1.1 Operating errors

10.1.2 Mechanical failures (including design, installation or maintenance)

10.1.3 Environmental factors (e.g. flood)

10.1.4 Loss of supply services (e.g. power failure) and

10.1.5 Other causes.

- 10.2 The Licensee must, within 24 hours, notify the CEO of the occurrence or potential occurrence of any incident which has the potential to cause, or has caused water pollution, pollution of the environment, health risks or which is a contravention of the licence conditions.
- 10.3 The Licensee must, within 14 days, or a shorter period of time, as specified by the CEO, from the occurrence or detection of any incident referred above, submit an action plan, which must include a detailed time schedule, to the satisfaction of the CEO of measures taken to:

9.3.1 Correct the impacts resulting from the incident

9.3.2 Prevent the incident from causing any further impacts and

9.3.3 Prevent a recurrence of a similar incident.

11. AUDITING

- 11.1 The Licensee shall conduct an annual internal audit on compliance with the conditions of this licence. A report on the audit shall be submitted to the CEO within one month of finalisation of the report, and shall be made available to an external auditor shall the need arise.
- 11.2 The Licensee shall appoint an independent external auditor to conduct an annual audit on compliance with the conditions of this licence. The first audit must be conducted within 6 (six) months of issuance of this licence and a report on the audit shall be submitted to the CEO within one month of finalisation of the report.

12. INTEGRATED WATER AND WASTE MANAGEMENT

- 12.1 The Licensee must update an *Integrated Water and Waste Management Plan (IWWMP)*, which must together with the updated *Rehabilitation Strategy and Implementation Programme (RSIP)*, be submitted to the CEO for approval within one (1) year from the date of issuance of this licence.

- 12.2 The IWWMP and RSIP shall thereafter be updated and submitted to the CEO for approval, annually.
- 12.3 The Licensee must, at least 5 years prior to the intended closure of any facility, or any portion thereof, notify the CEO of such intention and submit any final amendments to the IWWMP and RSIP as well as a final *Closure Plan*, for approval.
- 12.4 The Licensee shall make full financial provision for all investigations, designs; construction, operation and maintenance for a water treatment plant shall it become a requirement as a long-term water management strategy.

13. GENERAL CONDITIONS

- 13.1 Water samples must be taken from all the monitoring boreholes by using approved sampling techniques and adhering to recognized sampling procedures. Samples should be analysed for both organic as well as inorganic pollutants, as mining activity often lead to hydrocarbon spills in the form of diesel and oil. At least the following water quality parameters should be analysed for:
- o Major ions (Ca, K, Mg, SO₄, NO₃, Cl, F)
 - o pH
 - o Electrical Conductivity (EC)
 - o Total Petroleum Hydrocarbon (TPH)
 - o Total Alkalinity
- 13.2 These should be recorded on a data sheet. It is proposed that the data should be entered into an appropriate computer database and reported to the CEO.
- 13.3 The licensee must drill new boreholes in the area between the current groundwater monitoring points and the Suid-Kaap River. These should be developed such that they allow possible groundwater pollution mitigation (pump and treat) should a need arise.
- 13.4 The Licensee shall design and construct under drain to cover the entire tailings footprint in order to reduce the seepage load of migration plume, which is expected to move in a North-Westerly direction reaching the Suid-Kaap River after 20 to 35 years with conservative sulphate concentration of between 500 and 1000 mg/l.
- 13.5 Quarterly groundwater quality monitoring must be conducted to establish a database of plume movement trends, to aid in eventual mine closure.
- 13.6 The applicant must ensure in advance that alternative water supply for external water users relying on groundwater is provided to these users should groundwater resources be impacted.
- 13.7 The return water dams must be designed in such a manner that any spillage can be contained and reclaimed without any impact on the surrounding environment.
- 13.8 The Licensee shall at all times together with the conditions of this licence adhere to the Regulations on use of water for mining and related activities aimed at the protection of water resources (GN 704, 4 June 1999).

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APPENDIX VII

Section 21 (j) of the Act: Removing, discharging or disposing of water found underground if it is necessary for the effective continuation of an activity or for the safety of people

1. This licence authorizes Barberton mines (Pty) Ltd: Fairview mine for the removal of water found underground in terms of Section 21(j) water use activities as set out in Table 14:

Table 14: Water Use Activities

Purpose	Properties	Total Water (m³/a)	Co-ordinates	
Dewatering of water found underground for mine continuation.	Section A Kaap Block Lot 123	779 202 m ³ /a	25°43'55,8"S	31°06'01.7"E

2. The licensee shall provide any water user whose water supply is impacted by the water use with potable water.
3. The quantity of water removed from underground must be metered and recorded on a daily basis.
4. Self-registering flow meters must be installed in the delivery lines at easily accessible positions near the dewatering points.
5. The flow metering devices shall be maintained in a sound state of repair and calibrated by a competent person at intervals of not more than once in two years. Calibration certificates shall be available for inspection by the CEO or his/her representative upon request.
6. Calibration certificates in respect of the pumps must be submitted to the CEO after installation thereof and thereafter at intervals of two years.
7. The CEO must be informed of any incident that may lead to under-groundwater being disposed of contrary to the provisions of this license, by submitting a report containing the following information: -
 - 7.1 nature of the incident (e.g. operating malfunctions, mechanical failures, environmental factors, loss of supply services, etc);
 - 7.2 actions taken to rectify the situation and to prevent pollution or any other damage to the environment; and
 - 7.3 measures to be taken to prevent re-occurrence of any similar incident.
8. The licensee shall follow acceptable construction, maintenance and operational practices to ensure the consistent, effective and safe performance of the underground water removal system.
9. Reasonable measures must be taken to provide for mechanical, electrical or operational failures and malfunctions of the underground water removal system.

END OF LICENCE

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